REPORT RESUMES

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A TRAINING INSTITUTE FOR TEACHERS OF TECHNICAL PROGRAMS IN AGRICULTURE.

STATE UNIV. OF NEW YORK, AG. AND TECH. COLL. COBLESKILL

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A TRAINING INSTITUTE WAS HELD FOR TEACHERS OF TECHNICAL PROGRAMS IN AGRICULTURE IN WHICH SPEAKERS AND DISCUSSION GROUPS EXPLORED AND EXPLAINED (1) THE NEED FOR TECHNICAL EDUCATION IN AGRICULTURE, (2) FACILITIES NECESSARY FOR SUCH INSTRUCTIONAL PROGRAMS, (3) FACULTY REQUIREMENTS FOR TEACHING COURSES IN THE TECHNICAL FIELDS OF AGRICULTURE, (4) PLANNING CURRICULUMS AND OCCUPATIONAL EXPERIENCES, (5) YOUTH ACTIVITIES, (6) THE FUNCTION OF THE ADVISORY COMMITTEE, AND (7) PLACEMENT OF STUDENTS. ALSO DISCUSSED WAS THE NEED FOR TRAINED TECHNICIANS (1) IN GOVERNMENT EMPLOYMENT (MEAT AND PRODUCE INSPECTION, CONSERVATION), (2) IN LIVESTOCK INDUSTRIES AND FARM PRODUCTION AND SERVICES, (3) AS MANAGER TRAINEES IN FOOD AND FEED-GRAIN COMPANIES AND AS FOOD AND PRODUCE BUYERS, AND (4) IN OTHER MISCELLANEOUS AREAS AS FIELD REPRESENTATIVES, LABORATORY TECHNICIANS, AND LAND APPRAISERS. (GC)

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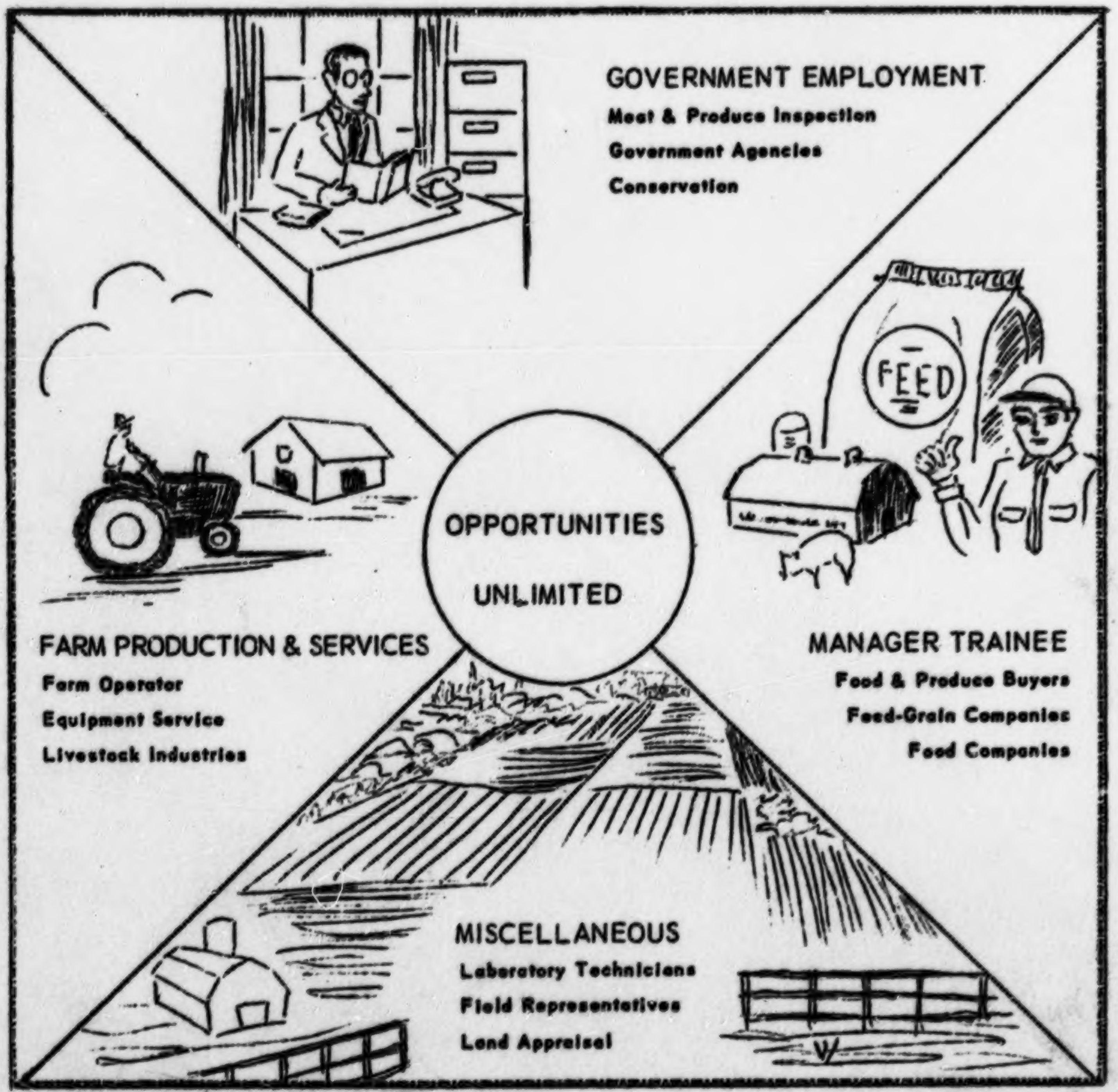
A Training Institute for Teachers of Technical Programs in Agriculture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AUGUST 1 – 5, 1966

STATE UNIVERSITY OF NEW YORK
AGRICULTURAL AND TECHNICAL COLLEGE
COBLESKILL, NEW YORK

FOREWORD

There is a growing demand for post high school education in agriculture at the technician level.

A large number of post high school institutions in many states will be expanding agricultural education at the technician level in the future. The expected expansion has created a need for the development of guidelines, useful to teachers, administrators, and agricultural industries in developing programs to educate technicians. The United States Office of Education has recognized the need for these guidelines. The Institute held at the Agricultural and Technical College, Cobleskill, New York, was developed in order to establish procedures for the implementation of technical education programs in agriculture to meet these needs.

Representatives from agricultural business and industry, teacher educators, administrators, and teachers met together to plan for educating technicians for agricultural occupations. This digest of material presented as a result of this Institute represents the thinking of special speakers, resource people and vocational and technical educators across the country. The suggestions found herein should be helpful to post high school institutions presently offering technical programs, or to those who plan to initiate programs in the future.

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WELCOME

Charles Gaffney*

Summary of Remarks

We are extremely honored in having people from about 40 states in attendance for this program, and it is not only a pleasure for me to welcome you to the college, but also to welcome you to New York State and Schoharie County.

Cobleskill is located in a very rural area, and the major source of income in this area is from the sale of agricultural products.

We are this year celebrating our 50th year of instruction. The agricultural curriculums on this campus, and the enrollment in these curriculums has been the highest of any of our divisions. We point with pride to the numbers of students who have graduated from this college in agriculture, and who are successfully competing in the field.

This fall we will have approximately 1,250 daytime students and a small evening division. By 1970 we expect to have 1,850 daytime students and by 1974 about 2,400 daytime students. At the present time we have five curriculums; Agriculture, with several options; Business; Nursery Education; Food Service Administration; and General Education. We also have Industrial Laboratory Technology as a part of General Education. In 1967 we will introduce Liberal Arts and some vocational programs.

I hope while you are here on campus you will not only tour the agricultural facilities, but also the entire campus. In addition, I hope you will find that the accommodations are to your liking, and that this program is worthwhile.

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*Acting President, State University of New York, Agricultural and Technical College, Cobleskill, New York

THE NEED FOR, AND THE EXPECTED OUTCOMES FROM, THE INSTITUTE

John Lacey*

Summary of Remarks

The problem of educating technicians to work in the industries and businesses in the nation is not a new function of the public schools of the nation. Providing leadership in the development of technical education programs is not a new function of the Division of Vocational and Technical Education. The problem of providing leadership in the development of programs for the purpose of educating technicians to work in agricultural occupations is somewhat new to many of us who have been heavily involved in agricultural education for many years.

Title 8 of the National Defense Education Act of 1958 provided funds to support educational programs and to develop technicians for these occupational areas which were considered vital to the national defense. These funds were used largely to support programs that were educating technicians to assist professional engineers. Many technicians were produced in mechanical, electrical, civil and other engineering fields. Very little was done to educate technicians for agricultural occupations.

Technical education for agriculture is not really new to many parts of the nation. New York State and the Agricultural and Technical College here at Cobleskill have offered programs for 50 years. For the past 30 years the programs have been offered at the post high school level.

The ever increasing complexities and specialization that has recently occurred in production agriculture is causing a demand for workers in agricultural production who are educated as highly skilled technicians. Technically trained workers are employed each day to serve the management of larger production units. Technicians in production agriculture are needed in all areas including farm equipment, soil management and fertilization, and agricultural chemicals (pesticides, herbicides, etc.)

The increasing demand by farms for services is causing a need for technically trained workers in many of the agricultural businesses and industries across the nation. Grain, feed, seed, farm supply, farm equipment, and farm chemicals are examples of agricultural businesses in need of workers who are educated at the technician level.

These needs are well known, and yet there is considerable confusion among agricultural educators as to just what is meant by the term technical agricultural education.

It is one of the purposes of this Institute to develop some understanding of the meaning of technical education as we move forward together in developing agricultural education at all levels.

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*Program Specialist, Agricultural Education, Department of Health, Education and Welfare, Office of Education, Washington, D. C.

Mr. Hunsicker, Chief of Agricultural Education, and Dr. Walter Brooking, Program Specialist, Technical Education, in a recent issue of The Agricultural Education Magazine, defined an agricultural technician as a specialist in some area in the broad spectrum of applied science in agriculture or closely allied engineering. Almost everyone who writes on technical education today has his own pet definition of a technician. In this conference we could spend considerable time on this problem. I believe, however, that we should concern ourselves more with the ways and means of developing educational programs to train workers to meet the needs of employers rather than meeting the controversial definition of a term. I think we can accept Dr. Brooking's and Mr. Hunsicker's definition and then move forward to develop the educational programs needed.

As we move into the development of programs that may be quite new to some, it is imperative that we have our objectives clearly in mind. One of the vital purposes of this conference is to develop a point of view, a set of objectives or guidelines that will help us as we attempt to implement programs for educating technicians for the agricultural industry.

I have listed ten major objectives of the conference. As the program unfolds, I hope it will be apparent that the speakers and resource people are speaking to some of the questions posed in this list of objectives.

1. To determine the needs for technical education in agricultural occupations.
2. To present information on the opportunities for graduates of technical programs.
3. To identify the successful practices and procedures with regard to administration.
4. To observe and study the necessary physical facilities for technical programs.
5. To determine faculty needs in technical education in agricultural occupations.
6. To provide help in developing new curriculums for technological programs.
7. To determine the role of youth organizations in technical level occupations and post high school programs.
8. To provide information on initiating technical programs in agricultural occupations.
9. To determine good placement and follow-up procedures.
10. To provide supervised occupational experiences.

The committee reports which will develop as a result of the attack on these objectives will provide guidelines which will be useful and meaningful in developing the kind of programs needed in technical education for agriculture.

NEED FOR TECHNICAL EDUCATION

S. V. Martorana*

Summary of Remarks

I think there is more justification for technical education than simply the necessity in this country to produce manpower to staff, as employees, the industry, and support the economy of our nation. Naturally, we are interested in manpower needs and statistical analyses of the manpower requirements in our country and more specifically, in New York State. Yet, I believe, other arguments support technical education.

Statistical information gathered in the Pearce study leaves no doubt whatsoever that our current production of people in the technical occupations is not at a level sufficient to maintain the state's priority among the other states as an industrial state.

Today, I would like to use a different approach to justify a technical education aspect and emphasis in our educational system that is based more directly on educational considerations rather than manpower and economic considerations.

We already have a strong emphasis on technical education and among the technologies, agricultural education. We seek to expand the curriculums of these colleges in order to protect what I believe is a basically sound educational principle -- that the best education occurs in a framework where the curriculum is comprehensive and where the student body is one that is representative of all career interests and specializations, or majors in academic as well as occupational curriculums.

If you were to picture a map of New York State and were to locate on the map the 28 public community colleges that are now in operation, and the six existing agricultural and technical colleges, you would find that New York State is pretty well blanketed with two-year public institutions. We can say at the present time that upwards of 85 per cent, perhaps as many as 90 per cent of the students graduating from high schools in New York State are within reasonable daily commuting distance of a public two-year college. I digress for just a moment for those of you who may not know New York's structure for public higher education to point out that the six Agricultural and Technical Colleges are integral parts of State University of New York, and are totally state supported and state controlled institutions. In contrast, the 28 public community colleges are state aided, state supervised institutions, but the control and coordination of these colleges represent a joint state and local effort. Community colleges are locally controlled and sponsored, but supervised and assisted in financial support by effort at the state level. When eight or nine additional community colleges are finished, we will be able to say that over 95 per cent of the graduates of high schools in New York State will be within reasonable commuting distance of a public two-year college.

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*Executive Dean for Two-Year Colleges, State University of New York, Albany, New York.

This is our objective as far as locating these institutions is concerned. State University of New York intends to encourage the establishment of two-year colleges to the point where there will be, within reasonable commuting distance of every high school graduate, or virtually every high school graduate, such an institution, and we are well on the way toward accomplishing that objective.

This basic educational objective of the State University of New York is to make possible for every high school graduate who wishes it and can profit by it to have some kind of post high school educational opportunity. The mere locating of institutions so that the coverage is there geographically is not enough.

What must be done in addition, is to provide in these institutions a curriculum sufficient in scope and comprehensiveness to encompass the interest span and the career objectives of the high school graduates who will be enrolled. This will enable the student who is interested in electronics technology to have a chance to pursue his interests and to become more self-fulfilled and self-sufficient; it will also help the young lady who is interested in cosmotology and has graduated from high school to have a comparable kind of opportunity. Each student will be helped to reach employability in the career of his choice, whether this takes six months to accomplish in terms of length of training, or duration of curriculum or whether it takes two full years. This kind of comprehensive coverage of the career fields and of individual choices is necessary if we are going to deliver when we say opportunity will be provided beyond high school for every high school graduate or person of equivalent maturity and background of experience. This is the commitment to comprehensive educational service that the public two-year institutions have to express and follow through in program development.

Bit by bit, therefore, the educational programs of public two-year colleges are being expanded.

The latest move toward making the Agricultural and Technical Colleges comprehensive is to authorize them to offer Liberal Arts transfer curriculums. These programs will lead to the baccalaureate degree upon transfer of graduates from the institution to junior year status at four-year baccalaureate degree-granting institutions. This has now been decided upon by the State of New York, and the Agricultural and Technical Colleges will, in the fall of 1967, begin to offer arts and science transfer programs, not at the expense of the present emphasis on the technologies, but as an added strength.

At the same time Agricultural and Technical Colleges are encouraged to move in a direction of greater comprehensiveness through liberal arts programs, they are also encouraged to adopt programs of a vocational nature of less-than-two years duration. This expansion is already being implemented in a number of places actually at an accelerated schedule in comparison to the development of the liberal arts and sciences. At Alfred Agricultural and Technical College, in the fall of 1966, there will be established five programs of less than two years duration in vocational education, aiming at preparation of craftsmen and artisans as opposed to technicians.

In the interest of developing and implementing the principle of comprehensiveness in the community colleges, it has proved necessary to get across to the leadership of the locality and the institution the concept that a sound comprehensive program requires technical and vocational courses. Only in so doing is it possible to reach the interests of all high school graduates in the service area of the college.

New York State's community colleges, therefore, are being encouraged strongly to develop more and more technical and vocational curriculums. They are responding at various rates. A strong, broad program in vocational and technical education including ones related to agriculture is part of a sound, statewide educational plan for post high school education.

We need technical education in order to protect and preserve this basically sound educational concept of comprehensiveness in the educational program, extension of individual opportunity through an "open door" student admissions policy. In American public education I think the principle is just as valid at the high school level as it is at the community college level,and indeed at the university level. In our American democratic society we have demonstrated consistently a commitment to this notion of comprehensiveness at every level -- comprehensiveness of curriculum and comprehensiveness of coverage of individual interests so that there is no selectivity, or shall I say, no discrimination, in the way different groups of students are treated in their pursuit of further training and education because they differ in their career choices or interests.

In a sense, the movement that has occurred in New York State and in some other states to establish area vocational schools which specialize and particularize their program only to the vocational programs, represents a violation or departure from the basic educational principle of comprehensiveness. I submit to you that segregation by curriculum is just as bad as segregation on any other terms, and I would hope someday that at the high school level there will be a recapturing of the principle of comprehensiveness.

The only justification I can think of for the current push in New York State for separate area schools that specialize in vocational education at the high school level is that in the long run these new institutions will become larger administrative units in which are offered the academic programs as well as the vocational programs.

Let us return, then, to agricultural education and see how also we need an emphasis on career choices that relate to agriculture. If, in truth, we are going to fulfill the ideal or the principle that we are going to give as broad a choice of opportunity to students as possible, and do this in enough places in the state that unrestricted educational opportunity beyond the high school actually results, there will have to be curriculums offered in agriculture as well as in all other major fields of work.

There is a commitment in our two-year colleges to the occupational field wherever there can be a justification based essentially on two considerations. They are: (1) a demand on the part of the students coming out of our high schools for this type of training, and (2) a reasonable chance that the persons so trained are going to be employed. The two considerations reinforce each other and if both are present there should be an offering of the curriculum that the people want and for which there is economic justification.

I am not going to insult your intelligence by trying to be an expert in your field. You are the experts in deciding what specialities in agriculture meet these two qualifications. I am saying merely that if any curriculum is presented by a two-year college in New York State which meets the basic criteria just described, whether in agriculture or any other field of work, we will give favorable consideration to the adoption of that curriculum in a public two-year college. We support this view because by so doing the comprehensiveness of the public two-year college will be strengthened and its public service improved.

It is up to you specialists in agriculture to make determinations of the interests on the part of students who may want to major in the field and the reasonableness and the assurance of employability in these fields after the students are trained. Agriculture is a shifting career field. There are changes occurring in it, but the nonspecialists are not the proper source of answers as to how this career field is shifting. It is up to people close to the field, to the employers, and to the colleges to make these analyses and to report the outcomes to administrators and program planners who should work with you in translating the results of your analyses into curriculum changes in the schools and colleges.

To continue with my main theme, the need for technical education in preserving the integrity of the comprehensive institution, I want to close with a final word directed right at you. As members of faculty in institutions which I hope will be comprehensive, you are living in an age when the arts and sciences and other curriculum offerings in high schools and community colleges or two-year colleges that lead to the baccalaureate degree are riding high. I suppose this is not only a current thing, but will always be true. There is a hierarchical value structure attached to different curriculums in our educational program. Those that lead to the high-level professions, medicine, law, engineering, teaching, and the like, have a higher status attachment in the minds of the general public than those that lead more directly to other occupations. In this status hierarchy the technician curriculums are a little higher than the vocational and the craft curriculums.

The point that I want to make here is that you in this audience today have a professional obligation as members of a faculty to work to preserve the integrity of the institution of which you are a part. It is your duty to assist the faculty of your institution as a whole to understand, accept, and respect the principle of comprehensiveness and completeness of service to the age group your institution serves. Your job includes interpreting the complete role of your institution as a part of an effective overall educational structure. The hierarchical status attachment just described exists in the minds of faculty as well as the general public. Unless we work hard at preventing it, we will get a fractionalization of interests, effort, and dedication of our faculty in public two-year institutions. This threat occurs at the high school level as well as at the collegiate level, as I am sure you know. It militates against good education. All of us, as good educators, should work in every way we can to prevent this fractionalization from occurring.

As members of the faculty in the specialized field of agriculture, you should emphasize to your colleagues the values of comprehensiveness of programs and student services in a single institution. There are educational values that can be obtained only in a comprehensive setting. If we lose these values, I think we are losing something basically good for the young people we are trying to serve.

In the "battle of the budget" for example, unless you insist on your rights and the importance of your curriculum, you are going to lose out. The dollars will go toward equipping the physics laboratory, or the expansion of the math program, or getting a new language teaching facility. They will not go toward improving the shops and the program in agriculture. In stating and asserting your case you have to stand up in the faculty debates and the associations with your colleagues in the Liberal Arts and Sciences and protect the overall integrity of the institution of which you are a part, whether you are in a high school program or in a collegiate program.

I believe all this can and must be done through mutual effort, understanding, and respect. I call to your attention the fact that we are all part of a common enterprise. Our case for vocational and technical education should be made, not a matter of fighting the people in the other areas of specialization, but as a condition of excellence in educational service. We must get our colleagues to understand what we are working for and develop an atmosphere of cooperation.

So I close with this bit of philosophy from "Pogo". I wish I could find an equally appropriate quote from Aristotle or Socrates or some other great philosopher, but I cannot. I am sure you have all read this comic strip in which at times some very fine expressions of philosophy and guidelines for living are expressed. There was in it once a series that was a bit of a takeoff on the American Revolution, and in this particular panel, an animal in Pogo's swamp came running up to Pogo,(both were dressed in American Revolutionary War attire, with Pogo as the Commander) and shouts "We have met the enemy, and they is us!!"

THE ROLE OF THE AGRICULTURAL EDUCATION STAFF IN TECHNICAL TRAINING

Frank J. Wolff*

Summary of Remarks

I am very pleased to represent the supervisory staff in Agricultural Education of the New York State Education Department at this Training Institute.

Organization

Since the creation of the State University of New York by an act of the Legislature in 1948, secondary level programs in agricultural education and post secondary programs have become somewhat divorced from one another. The programs in operation at each of the six two-year contract colleges of agriculture and forestry, are under the jurisdiction of the President of the State University of New York. The secondary level programs including the work which is done with out-of-school young men on farms, has been under the jurisdiction of the State Education Department. Technically speaking, both the State University of New York and the State Education Department are under the administration and supervision of the New York State Commissioner of Education.

Cooperative Features

Secondary programs and post secondary programs are actually under separate administrations, but continue to have cooperative activities which involve agricultural educators at the secondary, two-year post secondary, and four-year post secondary levels. Very close coordination and cooperation has been characteristic of the activities of the Agricultural Education Supervisory Staff and the Agricultural Teacher Education Staff at the contract College of Agriculture. Cooperation has come about through regular meetings of the joint staffs in Agricultural Education.

Some Examples of Jointly Conducted High School and Technical College Activities

For several years the joint staffs in Agricultural Education have looked toward the Agricultural and Technical Colleges for assistance in conducting various professional improvement workshops for teachers of agriculture at the high school level. Each summer approximately a half dozen different one week workshops are conducted by several of the six agricultural and technical colleges. This summer five are planned all in the area of agricultural mechanization. The purpose of these workshops is to provide teachers at the high school level with short intensive courses through which they develop up-to-date competencies and skills as well as understanding of current practices.

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* Associate, Bureau of Agricultural Education, State Education Department, Albany, N. Y.

For the past several years, the supervisory staff has made it its business to become more intimately familiar with the programs in operation in agriculture at the agricultural and technical colleges.

In the past two years, courses of study for high school programs in ornamental horticulture and in conservation have been developed which compliment rather than duplicate those in operation at the agricultural and technical colleges. I point out that it is the firm judgement of the joint staffs in agricultural education that there is room for and the need for occupational education programs for various off-the-farm and farming occupations at the high school, two-year college, and four-year college levels. We feel that the mission at the high school level should be that of providing training for employment at the semi-skilled, skilled, and to some extent to the owner-operator levels. The task at the two-year colleges is probably that of training for technical, managerial, and some professional occupations and the emphasis of the four-year colleges is that of preparing for professional and kindred occupations.

Summary

1. The agricultural educators at the various levels in New York State have had a long and varied history of cooperation.

2. We in the State Education Department look forward to the day when we will be working even more closely with our colleagues at the agricultural and technical colleges in the joint development of programs which will meet the needs of youth during their high school years and post high school years and of adults who are in need of training or re-training to be better prepared to meet the challenges of a changing technology in agriculture.

3. The greatest need which we see is for the development of programs at the post high school level, non-degree in scope and perhaps short term in nature which will meet the needs of those who, for one reason or another, have not been appropriately served in high schools and cannot be appropriately served in a post high school degree program.

THE IMPORTANCE OF TECHNICAL TRAINING FOR THE GRAIN, FEED, SEED AND FARM SUPPLY BUSINESSES

Alvin E. Oliver*

Summary of Remarks

Food is the nation's largest industry. The 85 billion dollars that consumers spent for food in 1965 was nearly one-fifth of their total consumption expenditures. An important segment of the food industry is represented by those who invest their capital in grain, feed, seed and fertilizer processing and distribution.

These companies provide the mechanics and means for purchasing, processing, conditioning, transporting, milling or manufacturing, servicing, and exporting the raw product between the farmer and the consumer or to the processor who serves the consumer.

The grain industry provides a market for the farmers' crops and the farm supply industries manufacture and merchandise fertilizer, feed and other supplies which the producer uses in production.

In addition, large chemical and petroleum companies have entered the fertilizer and chemical retail distribution field.

Size and Importance of the Grain, Feed, Seed and Farm Supply Industry

The changes taking place are rapidly increasing the needs for technicians in complex industry. Some indications of the size and importance of the grain, feed, seed and farm supply industry are as follows:

--- 2,657,334 railroad cars of grain and grain products were shipped in 1965. The figure will be higher in 1966.

--- About one billion bushels of wheat were sold by farmers in 1965, and moved through the marketing channels. Total production was about 1.2 billion bushels.

--- 850 million bushels of wheat were exported in the 1965-66 fiscal year.

--- 750 million bushels feed grain were exported in the 1965-66 fiscal year.

--- 9,500 grain warehousemen have contracts with the U. S. Department of Agriculture under the Uniform Grain Storage Agreement.

--- 4.7 billion bushels grain storage capacity is available in these UGSA warehouses.

--- 32 million tons of fertilizer are manufactured annually. (fertilizer materials)

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* Executive Vice President, Grain and Feed Dealers National Association, Washington, D. C.

--- Over 100,000 inspections (car and truck) of corn were made in 1965

--- 56 million tons of feed are manufactured annually in the U. S.

--- About 4 million total samples of grain are inspected annually in the U. S.

--- About 15,000 dry cargo barges are in operation in the U. S. of which a high percentage are devoted to the movement of grain and grain products.

These are large and impressive figures.

The Grain and Feed Dealers National Association is made up of a cross-section of industry firms ranging from the smallest country elevator to the largest grain handling, processing and exporting complexes. Fifty-four State Associations are affiliated with the National Association, representing a total membership of approximately 15,000 members throughout the United States.

Twelve of the member firms of this National Association are listed in a recent issue of FORTUNE magazine in the top 212 largest industrial corporations in America. Several other members are privately-held firms with sales of over one billion dollars annually, however, most of our members are small businesses. Grain, Feed, Seed and Farm Supply firms are a constant source of accurate and up-to-date information for producers. They keep producers posted on the latest information on varieties, prices, fertilizers, transportation, harvesting, storage and government rules and regulations.

Keeping the farm crops in good condition requires extensive know-how, experience, and expensive equipment.

There is need in this industry for the youth of tomorrow. Our challenges are complex and technical.

Company Training Programs

Company training programs in this industry range from very complete training programs by a few companies to no training or very little training for the majority of companies.

James Albrecht, of Mighigan State University, recently completed a study entitled "A PROCESS FOR DETERMINING VOCATIONAL COMPETENCIES FOR THE PERFORMANCE OF NINE ESSENTIAL ACTIVITIES FOR SALES PERSONNEL IN THE FEED INDUSTRY AND THE LOCI AT WHICH THE COMPETENCIES SHOULD BE TAUGHT." It was recommended that the dealer or company should teach many competencies. Sales training can be handled at the dealer level if there is proper assistance for the dealer-training program.

College Training Programs Presently Available

Technical training for the grain and feed industry has existed for many years. Michigan State University initiated a technical program for elevator and farm supply on January 2, 1946. This two-year program, combining occupational training with classroom instruction, has been in continual operation for over 20 years.

A second feed technology program is offered by Kansas State University. This four-year technology program offers a baccalaureate and/or advanced degree. Students in the technical program at Kansas State University select one of three options:

--- a major in operations (engineering)
--- quality control (nutrition)
--- administration (business)

How This Curriculum Guide Came Into Being

In the summer of 1965, Mr. Neville Hunsicker, Chief of Agricultural Education, Office of Education, U. S. Department of Health, Education and Welfare, called upon the Grain and Feed Dealers National Association to review with the Association staff the need for the preparation of a curriculum guide.

In considering whether we would prepare the curriculum guide as requested by the Office of Education, several objectives were evaluated.

1. Was there a genuine need for the preparation of a curriculum guide?
2. We were only interested in preparing the guide if it would be of excellent quality.
3. Realizing that the curriculum guide would require a standard of excellence, we also insisted on individual and complete responsibility for its preparation.
4. We asked for reimbursement to cover our "out of pocket" costs.
5. We realized the necessity of employing a recognized educator in order to make the guide meaningful to professional educational personnel.

Planning the Project

Preplanning for the curriculum guide was given the same careful consideration as are other programs of the Grain and Feed Dealers National Association. The President of the National Association appointed a special Educational Advisory Panel. This Education Advisory Panel held a planning meeting with Neville Hunsicker in December of 1965 to develop the model two-year post high school course of study for the grain, feed, seed, and farm supply industry. The members were well-qualified to defend their positions for the curricula within their own disciplines.

The agenda was organized within two specific and important areas:

First, to review technical programs already in operation.

Second, to thoroughly discuss the specific needs for training in the areas of:

1. Agronomy
2. Feeds and Nutrition
3. Sales
4. Industry and Business Courses
5. Basic or background courses.

As a group and individually, the panel members were not hesitant to recommend new approaches. The discussions were carried on freely and each session led off with a "resource leader". Following the report of this "resource leader", complete discussion was held as to the needs within that subject matter. Each idea was tested as to group reaction.

The chairman of each session encouraged discussion but no final decisions were permitted until a decision-making period at the end of the conference. Our last day was devoted to the task of weaving together the tested ideas into one model course of study. In so doing, a model list of courses was developed that has never been taught by any post high school or college.

Dr. Raymond Clark, Professor of Education, Michigan State University, attended the workshop as a consultant. At this meeting, Dr. Clark wisely sat back and watched the industry specialists build a curriculum. Like a professional builder, he did not interfere with the architects so long as they were professionally sketching a model drawing.

The post high school curriculum developed at this meeting is designed primarily to prepare students for employment at the technician level where the need for trained personnel is most critical.

Method of Procedure of Writing the Curriculum Guide

Dr. Clark devoted considerable time to reading of literature and reference materials, traveled extensively visiting the various markets, meeting with many members of the industry, and visiting elevator locations as well as educational institutions that had successful training programs or were beginning programs. He also traveled widely for discussions with a large group of specially selected consultants who had taught technical programs in feed, seed, grain, fertilizer, or farm supply.

My staff and Dr. Clark met with the Office of Education (Dr. Brooking and Mr. Hunsicker) early in March and again in May to review the progress of the curriculum guide.

The Future

Taking a look at the future, there are several problems that we see of concern on the national level.

These problems are:

- --- The problem of teacher training.
- --- Needs for in-service training programs for present employees of grain elevators, feed mills and farm supply stores.
- --- Need for managerial development programs.
- --- Preparation of textbooks, references, visual-aids, and teaching materials.
- --- Up-dating of the programs.

It is the state and local feed and grain people who can be of the greatest help to the future of this program. Some of the problems and challenges at the state level will include:

- --- Surveying the local needs.
- --- Making inventory of the resources that are available.
- --- Recommending qualified instructors.
- --- Development of occupational training.
- --- Placement of students.
- --- Many other problems that will exist between the educational institutions and the industry on the local level.

Summary

We have attempted to be helpful. A meaningful curriculum guide has been developed. The curriculum is new and exciting. The industry will be pleased to hire graduates of this program.

THE IMPORTANCE OF TECHNICAL TRAINING FOR
AGRICULTURAL BUSINESSES
FARM MANAGERS AND OPERATORS

Floyd S. Dubbin, Jr. *

Summary of Remarks

Farming is a big business today and it will be more complex in the future. The agricultural industry is the biggest buyer, seller, and borrower in the United States. Within the next ten years, more than a half billion people will be added to the world's population. These people must be fed, therefore, agriculture faces a challenge and a great future.

Agricultural and technical colleges must train students not only for our own farms, but for overseas assignments as well.

The trend is toward fewer and larger farms. This means increased capital investment and greater efficiency. Tt is through science, management, and increased efficiency that agricultural development will come. There will be a great demand for technicians of all kinds. This is, to repeat, a job for the agricultural and technical colleges.

Farm managers and operators of today must be good businessmen. Through their cooperatives, farmers operate feed mills, fertilizer plants, seed houses, grain elevators, packing houses, refineries, electric companies, insurance companies, telephone companies, banks, credit unions, retail supply houses and research farms. Therefore, they need trained managers, chemists, antibiotic specialists and biology specialists.

Due to the great investment and the volume of business brought on by the trend toward partnerships and corporations, the farm managers and operators will need more accounting, credit and legal assistance. With greater tax problems, there will be a need for people trained in tax management and reporting. Our future farm managers and operators will need more training along these lines.

Of all the people employed in the United States, around 30 to 40 per cent have jobs in some way connected with agriculture. Because of the capital needed to start farming many boys cannot become farmers on their own, but with training they can become farm managers and operators, and possibly in time become an actual farm owner. Today's farm manager and operator need more skills and managerial ability to stay in business. The farm managers need more than the knowledge to produce. They need training in big business operation, in bargaining and marketing, advertising and public relations.

To become a farmer today one must be able to invest between 50 and 100 thousand dollars in land, buildings, machinery, and livestock.

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*Star Farmer of America, 1965, Middlefield, New York.

Then he faces many problems such as weather, insects, disease and labor shortages. This brings out the need for more technical training.

A good farm manager and operator needs:

(1) A good foundation at the home farm with father's aid and advice.

(2) Good Vo-Ag training in high school.

(3) Specialized training in college.

Farming is not just a job -- it is a "way of life". The future looks bright for the dairy farmer as well as the whole industry.

THE IMPORTANCE OF TECHNICAL TRAINING FOR THE FARM EQUIPMENT BUSINESS

L. R. Kanetzke*

Summary of Remarks

One hundred years ago 90 per cent of our population lived on farms. Today 7 per cent of the total population live on farms. The trend in farm population is expected to level out at 3½ to 4 per cent.

The number of farms is decreasing, however, the size of farms is increasing in acreage. One hundred years ago each farm worker supplied the needs for only four other Americans. Today, he must provide for 33 other people. The conclusion that we draw is that there must be more mechanization on farms.

Farming has actually made more progress than industry. Tractors as well as other items of farm equipment have taken over to produce more and to cut down the labor necessary to sustain our population and to provide food for other countries as well.

Trained specialists are needed to develop, sell, and maintain the complex farm equipment. An Agricultural Technician in the eyes of the farm equipment industry is anyone who has had some specialized training in a technical area and is applying that training in a practical way. A technician can be such in varying degrees. He may be a person who mechanically checks out operations of a machine, follows a test, or performs some other function to which he is assigned, or he may be engaged in some action which has a greater degree of responsibility but somewhat less than that assigned to the fully qualified engineer. In other words, a technician can have varying degrees of responsibility dependent upon his abilities and training.

The farm equipment industry as a whole would prefer to hire people who have an agricultural background. For whatever job you might name, if a person has been reared on a farm he has the knowledge of the situations and problems which exist there.

Examples of Technicians in the Farm Equipment Business

1. Engineering -- The area where more technicians are used than any other. Here are just a few of the technician type positions which are a part of this industry in the engineering area.

    Research and Development Technician
    Field Engineering Assistant
    Testing Technician
    Design Technician
    Fluid Power Technician
    Diesel Engine Specialist

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*Executive Assistant to Vice President, J. I. Case Company, Racine, Wisconsin.

2. Manufacturing -- This area of the farm equipment industry is not seeking agriculturally trained people, however, the young man looking for a job in industry could certainly find it here and the one looking for a job in the technician area might find it among these:

   Quality Control

   Shop Supervisors

   Laboratory Technicians

   Paint Technicians

   Foundry Technicians

   Production Control Technicians

   Time Study Experts

   Data Processing Programmers and Tab Operators

3. Marketing -- In marketing the specialists are not referred to as technicians but certainly they qualify as such. The following areas qualify:

   Territory Supervisors

   Blockmen

   District Managers

   and a step or two upward from this are positions such as:

   Sales Promotion Manager

   Sales Manager

   Branch Manager

   Parts Manager

   Service Manager

   Machinery Manager

   all requiring special training and all best filled by agricultural technicians.

Marketing also includes such positions as Product Education Specialist. The people who design the programs for informing both field people and dealers about new products, as well as standard items are real technicians.

4. Advertising -- is a place for agriculturally trained people who are trained as writers and promoters.

One particular marketing position which really classifies as a technician's job is one sometimes referred to as Product Manager. A man spending his time in the field watching his company's product in action as well as the products of competitors.

5. The Service Department in the farm equipment manufacturer's operation is full of agricultural technicians and more and more are needed.

In hiring a young man to enter the field service section of our company -- and I am sure I speak for the industry-- we look for a farm-bred youth who has completed high school and gone on to college for at least a year or two, or has taken specialized courses at college or in vocational schools. He must have leadership qualities and good judgement besides a thorough knowledge of farm equipment.

6. The Financial Area -- and that of corporate relations both have their technical specialists who need not have college degrees -- accountants, computer operators, personnel specialists, labor experts, et cetera.

This has been a quick review of some of the technical positions in the farm equipment industry -- but sufficient for our purposes here today. The thing we know about these technicians is that there is a real shortage today.

Industry can help to encourage these types of courses in the schools. Industry could help in their establishment and continuity. The management of farm equipment firms would gladly work closely with schools in this activity. Industry has a fine reputation for working closely with the schools, with the Vo-Ag instructors in developing courses, furnishing materials, and equipment, supplying lecturers, and offering assistance in many ways. Another way in which industry could -- and is willing -- to help is through cooperative work-study programs. Presently most of the full-time companies do just this in working with agricultural colleges.

It is gratifying to note the way in which dealers, dealer associations, and colleges and vocational schools are cooperating and collaborating on technician training programs. Reports from the schools reveal that there are more jobs available than there are qualified people to fill them.

The Farm and Industrial Equipment Institute is a trade association of most of the manufacturers in this business. Although definitely competitive in the conduct of business, this group unites strongly for universal beneficial action not only for the industry itself, but also for dealers, and in many ways which save the farmer and contractor money and improve his operations.

To summarize briefly:

1. Many technician positions await the trained and qualified person in the farm equipment industry.
2. The individual seeking training in this area should have interest in it, ambition to succeed, preferably some agricultural background or experience, and leadership qualities.

3. The farm equipment industry stands ready to share its know-how and contribute in any way it can with personnel, equipment, study aids, and the like, to help initiate and operate such programs.

4. While learning the trainee can pick up experience and some of his expenses through a cooperative work program.

5. Finally, the industry also will help in any practical way it can to promote the manpower development and training program.

In closing, I would like to repeat my plea to you to work closely with industry in developing the right kind of people in the right kind of way for all phases of agri-business. Encourage the farm youth to investigate first the advantages of remaining in this area -- his chances of advancement are probably better here than elsewhere.

And finally, keep up the good work of molding the character of our farm youth. We are proud of the job you are doing.

INSTRUCTIONAL FACULTY FOR VOCATIONAL TECHNICAL EDUCATION FOR AGRICULTURAL OCCUPATIONS

Digest of Statements from Panel Presentation

Robert Crane*

Instruction in technical courses is especially vital. Basically it is the instructor that represents the vital element in good education. Facilities are necessary and important but by comparison with instruction they are less significant. The curriculum is important but it can be easily changed, adjusted, or corrected as experience proves necessary. The curriculum is not vital since even a masterfully constructed curriculum will not deliver the desired results unless there is an instructor who can teach.

We could list many desirable qualifications for a good instructor, but I will consider only three.

1. First, we must have faculty who want to teach. They must enjoy the process of imparting knowledge to others and take real satisfaction from their achievement in this respect.
2. Secondly, we want faculty who are interested in the students of the age, ability, and interest group to be taught.
3. Thirdly, faculty should be capable in the technical field in which they teach. College degrees and years of teaching do not necessarily guarantee this ability.

In agriculture, we often find college graduates to teach technical courses. These instructors often come from high school vocational agricultural departments and are competent. If they have taught three years or more you can be sure they like working with young people. in general, they have a farm background and are sympathetic with the problems of agriculture.

With some limitations, industry may be a source of technically qualified teachers. Another good source of teaching manpower may be the beginner, the young man directly out of college. Advantages:

1. He can be started right and sold the philosophy of your program.
2. He will have energy and enthusiasm.
3. He may have as much practical experience as the older teacher.
4. He may be closer to modern technical practices and know-how.

There is, of course, the risk that he won't like teaching, and will leave.

Success of a technical program depends upon teaching, and the teaching that will take place depends upon the teacher.

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*Chairman, Division of Agriculture, State University of New York, Agricultural and Technical College, Morrisville, New York

Evan Dana*

I am firmly convinced that one should not attempt to develop an exact or detailed score card for the selection or evaluation of an agricultural teacher.

There are three major areas of required competencies of qualified agricultural teachers: (1) Technical subject matter; (2) Agricultural experience; (3) Formal course work in science or agricultural teaching methods.

1. Technical Content of Subject Matter - A basic background is all important in English, Communications, Mathematics, and Science. However, if one is to teach Animal Husbandry, he should have pursued a major curriculum in this special area as a prerequisite to his B. S. Degree work.
2. Agricultural Experience - The best prospective teacher is one who was farm-reared on a good farm. There may be exceptions to this statement.
3. Educational Teaching Methods - Two or three good courses in teaching methods and educational psychology should be prerequisites to the teaching experience, or taken as in-service training.

Other than these three important areas of required competency, I would like to add a few additional prerequisites.

a. Be a good salesman - be able to sell himself and his course to his students.

b. Understand and be sympathetic toward these young people, some of whom are handicapped by immaturity.

c. Work with the poorest students in the class, and still challenge the top five.

d. The good teacher should exhibit a genuine interest in every student.

e. Be willing to work long hours to do the job.

f. Become moderately active in community affairs.

g. Do some agricultural extension work in one's specialized area.

h. It may be necessary and beneficial to perform a certain amount of agricultural research. This probably should be applied research in the form of tests, trials, and demonstrations.

i. Play a part in the placement and future follow-up of students. At a minimum, know something of what graduates and drop-outs do after leaving school, and what they do five and ten years later.

j. A good agricultural teacher in any situation or institution should be strong in "human relations".

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*Chairman, Division of Agricultural Technology, State University of New York, Agricultural and Technical College, Canton, New York

In closing, I would like to repeat that a good agricultural teacher should not be selected on the basis of a very exacting score card, that he should know his subject matter, possess a good background or experience, like agriculture, know or understand agricultural students, and ultimately become a devoted agricultural teacher.

Norman H. Foote*

Putting together a competent faculty for vocational and technical education for agricultural occupations is a difficult task. The field is broad and the number of people available is limited, and the job will be increasingly more difficult until more steps are taken to educate teachers for this field. The young man who will prepare himself as an instructor in technical education has "Opportunities Unlimited" in this area.

The first thing we all want is a dedicated teacher. The question then arises, what is a dedicated teacher? By "dedication" I refer to the satisfaction gained from the educational process with young people in the 13th and 14th years, a most critical time.

This faculty member should have a tremendously broad background in agriculture. Naturally, every faculty member should truly like young people. This means a genuine desire to help each student attain our State University motto, "Let Each Become All He Is Capable of Being",-- this often takes long hours outside the classroom, but is richly rewarding. The transition from high school to college is more difficult than most people realize.

There is no substitute for knowledge. Instructional faculty members must have bountiful knowledge coupled with the ability to teach. Instructional faculty must know how to work and be willing and eager to do so.

Faculty members must be expert at getting along with other faculty members, students, parents, and the public in general. Getting along well with people takes some salesmanship. In addition to selling himself, the faculty member should be selling technical agricultural education all the time, and also selling the institution.

To conclude, faculty in technical agricultural education need to have a strong philosophy for being of service to students. The most we can do for students is help them learn and develop. Too few education courses advocate being of service to students, yet basically, this is our job.

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*Chairman, Division of Agriculture, State University of New York, Agricultural and Technical College, Farmingdale, New York.

Wilbur M. Farnsworth*

A. History.

1. Many teachers from Vocational Agriculture in High Schools:
    - a. Have teacher training.
    - b. Experience.
    - c. Dedication.
2. Successful teachers in technical programs:
    - a. Have either field, industry, work experience, or a combination.
    - b. Have carried on either projects or associations in the field of specialization.
    - c. Continued professional improvement programs.
    - d. Have ability and knowledge to relate teaching to practical everyday problems.
    - e. Have interest and understanding of students.
    - f. Understand the objectives and philosophy of technical two-year programs.
    - g. Have at least one semester of course work in professional education.
    - h. Dedication to not only teaching but also the problems and needs of the students and the college.

B. What are we looking for today?

1. Master Degree in subject field.
2. Teaching minor in related field.
3. One semester of professional education courses.
4. Employment experience in the occupation taught, four to five years of successful work experience in the field.

C. Problems of securing and developing new faculty.

1. Salaries to compete with industry.
2. Required supervision and evaluation of teaching performance.
3. Shortage of trained specialists.
4. Lack of teacher training for technical education.
5. Lack of in-service training programs for instructional faculty.
6. Lack of mature teachers who understand the particular problems, concerns, and needs of the student.
7. Lack of status for the two-year college.
8. Junior College a "stepping-stone" to four-year college position. Means of building reputation and more "self-interest" than "student interest".

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*Chairman, Division of Agriculture, State University of New York, Agricultural and Technical College, Delhi, New York.

PROVIDING ADEQUATE FACILITIES FOR TRAINING FOR TECHNICAL OCCUPATIONS IN AGRICULTURE

Norman H. Foote*

Summary of Remarks

"Providing Adequate Facilities for Training for Technical Occupations in Agriculture" brings many thoughts to mind. What facilities? Buildings? Classrooms? Laboratories? Fields? Gardens and plantings? How about equipment?

I do not consider personnel as facilities, but I must pay homage in passing to the master teachers who have done a good job without adequate facilities.

Administrators sometimes do not understand that adequate facilities for technical agricultural education are many and varied and may be rather expensive. More facilities are required for all kinds of technical education than for liberal arts programs.

A most important facility in "Providing Adequate Facilities for Training for Technical Occupations in Agriculture" is a good farm. A farm for educational purposes ought to provide broad first-hand experience in general agriculture.

Where dairy farming predominates, a herd should be of such proportions that students obtain some real learning experiences. A dairy herd provides many good learning situations. Perhaps it would not be necessary in all parts of the country, but in the northeast I think every agricultural technician should be able to milk by hand and machine. Forty milking cows gives us about the right number for 125 first year students to get a certain minimum of experience, to provide sufficient milk for processing by food technology students, and to supply some milk for our dining hall.

A laying flock of 2,000 birds, some on the floor and some in cages, plus hatching and rearing 3,000 to 4,000, will provide poultry experience. This can be enhanced with turkeys and other poultry if desired. Birds for meat and some birds to illustrate genetics should be provided.

Twenty to thirty ewes, twenty beef brood cows, and ten brood sows with their offspring will provide further livestock experience. In some places, a horse enterprise, goats, rabbits, or game may be feasible.

In some parts of the northeast, there is considerable pressure for facilities to teach horsemanship -- pleasure horses, of course.

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*Chairman, Division of Agriculture, State University of New York, Agricultural and Technical College, Farmingdale, New York.

Buildings for these livestock enterprises vary widely. Some feel that an educational institution should be a show place. Certain taxpayers do not. There can be a happy medium. I am in favor of not building for the ages. If we have a choice in the matter, let us put these buildings up in such a fashion that we can afford new ones, or at least remodeled ones, in 20 years.

The acres of crop land to go with these enterprises can vary, but there should be enough land to at least illustrate how the crops are produced and to provide study opportunities for soils and crops courses. The acreage devoted to cash crops also can vary, but some cash crops should be produced.

Although only a small percentage of our graduates may engage in actual crop and livestock production, it is my firm conviction that every would-be agricultural technician should have some of this experience in his early years in order to be properly qualified in his specialization. Unless provided in the 13th and 14th years, these young people never will have the opportunity to get this broadening experience so necessary in most technical agricultural occupations.

I hope the time will come when some agricultural courses are offered in the liberal arts curriculum, with facilities provided for participation by the students. This is being done to a limited extent in horticulture, but very little in the other areas of agriculture.

How much farm equipment should be provided? It is not necessary to have all the latest machinery and it is not necessary for every student to become proficient with every machine. Some machines can be owned, some can be rented or leased, and some can be had on a demonstration basis. Machines must be selected for their educational value, rather than as a farmer would, on the basis of need for his particular acreage.

At least one tractor of as many makes as possible is desirable. It may be well to own as many of the soil engaging tools as possible rather than obtaining them some other way, since wear and breakage is apt to be greater than with other machines. Some of these may be easier to obtain than you might expect. I know of a case where a barn burned and the owner said we could have what was left of a John Deere plow. We rebuilt it, getting good lab instruction, and owned another plow. Instructors must be alert to every kind of opportunity, and more than that, ingenious and willing to work long and hard. If they do this, they may find this desire and willingness to work rubbing off on their students; and the students, in turn, will be better prepared to take a job after graduation.

Leasing agricultural machinery is good business. Tractors and harvesting equipment are good examples. Some manufacturers have an educational policy of leasing machines at 10 per cent of the purchase price per year. Usually the machine is replaced each year, or at the most, every two years. Sometimes a piece of equipment can be leased at a fixed price for three years and then owned.

For $100 we have a large current model sprayer on campus for a month each spring. It is delivered by the dealer, thoroughly demonstrated and explained, and then students use it on campus trees and shrubs. Laboratory study use is made of it on rainy days. Cost per student is under $1.00.

Develop good contacts with dealers of all kinds and equipment will come easier and be easier to keep up-to-date. Dealers and manufacturers cannot help if they do not know the need. This will also aid in placement for jobs. Faculty members should attend demonstrations, field days, farm auctions, and other affairs local and on the state level in an attempt to keep up-to-date. At least one new thing can be learned at each such affair. Keeping in close touch with experiment stations, the state college, research farms, et cetera, will help. Salesmen can take up a lot of time, but they also can bring you much new information regarding equipment.

The distribution and marketing of agricultural products provides many technical occupations. A market for student operation can be simple or extensive. Eventually a separate market building will be needed to provide the necessary technical experiences in assembling, grading, packaging, displaying, pricing and perhaps most important of all, learning about people. The sale of products may well finance the market building and eventually provide income for other things. Refrigeration, light, display, and people space are musts. Heat may or may not be needed, but if so, consider under-floor heat.

Some facilities can be developed. In agriculture and horticulture, we deal with growing things, so increase is easy. Livestock, fruit crops, trees, shrubs, plants, gardens, turf areas, et cetera, can be easily increased to meet instruction needs, if land is available.

How can facilities be kept current and up-to-date? If a rental system is followed, most farm machinery will be of the current model. Companies like to have their new machines seen and used by students. Loaned machines usually are not allowed to get old.

Good records should be kept and proper depreciation taken annually so new models can be obtained. Quite often this can be done in such a way that some new equipment arrives every year and some old machines are retired. Naturally there has to be some budget and agreement on how long a piece of equipment must last. I question very much the feasibility of instructing with equipment that is old. This means very careful justification when making requests.

A picture is no substitute for the real thing, but is a satisfactory substitute when the real thing is not available. Therefore, the development of a movie, film strip, and slide library is a most valuable facility. With some planning, effort, and a little money, much can be done in a year or two.

If we wait for adequate facilities we may never start, so I say start with anything and then build from there. Effective teachers are much more important than brick and mortar and equipment.

Automatic feeding of the dairy herd.

Dairy herd housing and laboratories.

FIELD TRIPS AND VISITATIONS

Brief Summary of Outside Areas Covered at the Conference

One area explored by the people attending the conference was facilities. In order to have a base line or a starting point, facilities were visited at the Agricultural and Technical College at Cobleskill and at Morrisville.

Another phase explored during the conference was Advisory Committees, and therefore a trip to an advisory committee member's business was planned. Another trip involved a visit to a graduate, in that part of the procedings including placement and follow-up.

The following comments are based on the visitations that were made. These visitations proved to be a successful part of the conference.

FACILITIES AT COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

Ornamental Horticulture and Agronomy

To serve 120 students enrolled in these two curriculums, there are four greenhouses, 25' x 50', connected by a foyer, 10' x 120', to the main building. The latter consists of an office for two of the instructors, a flower shop management laboratory, a flower design laboratory, and a laboratory for entomology and pathology. Other courses are also taught in these laboratories. Classrooms and two laboratories located in other buildings are used for teaching courses in soils, crops, and botany.

Approximately three acres are utilized for nursery management, perennial and annual gardens, turf plots, and temporary growing structures.

Future plans are in progress which will provide additional classrooms and faculty offices.

Animal Husbandry Facilities

The dairy barn and related facilities are considered as a laboratory for students majoring in Animal Husbandry. With this primary objective in mind, the dairy barn was designed so that optimum use can be made for instructional purposes.

The space provides for the housing of 30 Holstein cows and 15 Guernsey cows in tie stalls. These cows can be milked either in a milking parlor or in the barn with a transfer system. Calf and heifer pens are available for the herd replacements.

The feeding system makes use of two silos and the silage is fed by use of a gasoline powered feed cart. Hay can also be fed to the animals. A liquid manure system was installed to save labor and to be used as a demonstration for the students. An Animal Husbandry laboratory is also provided as a teaching facility for demonstrations of both dairy and beef cattle. The primary purpose of the laboratories is for the use of the students.

Farm Facilities

The 250 acre farm has 210 tillable acres. The cropping program is typical of northeastern dairy farms and it furnishes roughage and some grain for the dairy and beef herd. It provides a field laboratory for every agricultural curriculum with the exception of Dairy and Food Science. It is here that the student obtains the actual experience in crop production, plant identification, and equipment use.

Agricultural Engineering Technology

The laboratory-classroom building is nearing completion. It will provide work space for 50 majors and approximately 100 students from other departments who will elect to take courses in agricultural engineering.

The building includes three classrooms and the following laboratories: large machinery (2); diesel; gas engine; and tractor; hydraulics; paint; welding; equipment installation; and electricity and refrigeration. Also provided are offices for five faculty members, locker rooms, and washrooms, as well as a student lounge. The area of the building encompasses 30,000 square feet.

FACILITIES AT MORRISVILLE AGRICULTURAL AND TECHNICAL COLLEGE

The primary purpose of the visit to Morrisville was to see the facilities for Food Processing, Horticulture, and Animal Husbandry. The Food Processing building contains equipment embodying the most recent advances in the food industry. The plant is equipped with instructional material for preserving a wide variety of foods by canning, freezing, pickling, and other methods.

The Food Processing Technology curriculum prepares students for positions in food production, inspection, and grading of raw and finished products.

Morrisville has a modern demonstrational farm operated as a typical New York State Agricultural business. It owns and operates 175 acres of crop land and makes use of its outstanding herd of Holstein cattle for class and laboratory demonstration.

The campus farm is supplemented by a commercial-type greenhouse, which contains side-protruding benches to facilitate the growing of many different crops within a limited area. It also contains a flower and design shop.

ADVISORY COMMITTEE MEMBER

A visit to Max Shaul's farm provided an opportunity to see first-hand a member of the Advisory Board. Max and his wife are owners and operators of Shaul Farms, Incorporated.

At the present time the Shaul's own 1000 acres and lease an additional 200 acres. Max is raising approximately 600 acres of corn for grain, and 600 acres of vegetables.

He supervises a labor force of five full-time men and twelve part-time people in addition to the family labor.

The farm field trip was an excellent demonstration of the need for technical level training for workers in production agriculture. The specialization demonstrated on this farm illustrates the new horizon in agriculture, and the need for post high school education in agriculture.

COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE GRADUATE

Leithland Farms was selected to give the Institute participants an opportunity to see one of the graduates of the Agricultural and Technical College at Cobleskill.

John Leith and his wife were born and raised in the city. John worked his way up the agricultural ladder after graduating from the college. He served as herdsman, and then as an operating partner in a dairy farm business before buying Leithland Farms.

In seven years of farming, the Leiths have accumulated 42 milk cows, 7 bred heifers, and a complete line of farm equipment. He purchased his present farm with financing from F.H.A. and the Federal Land Bank.

Technical training was a vital factor in Mr. Leith's success.

PROVIDING PLANNED SUPERVISED OCCUPATIONAL EXPERIENCES FOR TECHNICAL OCCUPATIONS

Digest of Statements in Symposium

Ralph H. Granger*

Our basic philosophy of "Work Experience" for technical and other students is participation. Each student has three types of practical experience, set up as outlined:

a. The laboratory period associated with organized courses.

b. The school year's work experience is required in most curriculums. This involves actual practice and work in the area of interest for periods of time from 20 to 60 hours a semester. This is generally required of freshmen only. The Plant Science curriculum requires the practicum during each of the four semesters.

c. The "Placement for Work Experience", a summer program, is required of all students following each academic year.

d. Summer programs cover 17 weeks and weekly reports are required.

e. A student either finds his own position or positions are recommended by the student advisor. The advisor must approve the placement.

f. A "Placement Agreement" is required. This specifies many details including hours, wages, and duties of employer, student and school. Such an arrangement is necessary to avoid misunderstandings.

g. Each student is visited three or four times by his advisor, and more often if there are difficulties.

The major emphasis for "Placement for Work Experiences" is in the summer. It has worked well and it is of real value to the student.

Ray Brush**

The nursery industry is basically agriculture for we are producing and selling living plants. A nursery which is totally wholesale is just as much agriculture and just as much farm as the dairy farm, the grain farm, the orchard, or the vegetable farm. Unfortunately, some people think of the more specialized retail outlets and forget that even there, the plants must be watered, fertilized, and tended just as they are back at the wholesale nursery or the growing grounds where the plants were produced.

The nursery community, in addition to the wholesalers, the landscape nurseryman, the retail nurseryman, the mail-order nurseryman, and the nursery sales agents which make up the membership of the American Association of Nurserymen, also includes landscape contractors, wholesale florist growers, arborists, turf producers, landscape architects and landscape designers. Together these make up the specialized area of agriculture which an increasing number of people are beginning to refer to as landscape horticulture.

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*Associate Professor, Commerce Technology, Thompson School of Applied Science, University of New Hampshire, Durham, New Hampshire.

** Secretary, American Association of Nurserymen, Inc., Washington, D. C.

According to the Horticultural Specialties Census of 1959, the wholesale production of nursery plants more than doubled in the ten-year period, 1949 to 1959. In fact, it increased one and one-fifth times. We anticipate that during the current ten-year period the industry will approximately double again.

To continue this expansion, the nursery industry needs to improve its efficiency. To do this we must have technically trained employees. At the nurseries we need technicians who know not only several genus and species, but also many varieties of plants and their peculiarities when it comes to using fertilizer, spray materials, et cetera, as well as rooting hormones, weed control materials, and other very specialized operations. Landscape architects and highway departments are looking for well trained horticultural technicians who can do contract and inspection work. Schools, city parks, industrial firms, highway departments, cemeteries, golf courses, and even the homeowners are demanding more and better tree, shrub, and turf maintenance.

Along the way we should not forget that from the two-year technically trained horticultural graduates, there will be "x" percentage which are motivated to continue their educational training, seeking baccalaureate or higher degrees. There are increasing opportunities for these men as researchers, professors, technical representatives with industrial firms serving the horticultural community, and for a specialized group known as nursery inspectors. Every nursery producing trees and shrubs is inspected at least once during the year. These inspectors are employed by the State Departments of Agriculture. These employees are holding baccalaureate degrees or better and much of their training has been in entomology or plant pathology. To give you some idea of the numbers required in this specialized area, a recent survey indicated that Alabama is employing 13; Connecticut, 12; Florida, 95; Kansas, 6; Michigan, 59; New York, 42; Pennsylvania, 20; and Rhode Island, 3. The beginning salary range for these specialists is from $4,500 to $6,500, depending upon the state, with the current maximum for career employees going as high as $20,000 annually.

There is a technological revolution underway in the nursery industry at the present time. Technical areas which nurserymen are experimenting with and have established to limited degrees, or have established as a standard practice are: mist propagation, rooting hormones, and chemical weed control.

In considering occupational experience, training, or off-campus experience training, be sure to go to the State Nursery Association of the State Association representing the industry you are interested in working with to get their suggestions and assistance in both the planning and establishment of the program.

In the case of work experience programs, the nurserymen feel that there should be, in writing, an agreement between the student, the teacher, and the nurseryman, outlining specifically what is expected of each under this program. This requires preliminary discussion, particularly between the teacher and the nurseryman to make sure that the work experience desired by the student and the teacher can be obtained at that nursery. The nurseryman needs to know what is expected in training so that he can plan for himself and key employees to spend time with the student without sacrificing time at critical periods in their own activities.

Wages should definitely be agreed upon and the nurserymen suggest that the wages be uniform for similar work experience. There should be follow-up check visits by the teacher while the student is on the job. Nurserymen favor the student receiving credit for the off-campus work experience and expect that the student should submit definite periodic reports on the work experience. At the close of the work period, the student returns to the classroom, and a special oral report should be made to his classmates as well as the written summary report which should be submitted to the teacher. The nurseryman as an employer should furnish a simple report, rating the student and evaluating him on his work attitudes and ability to acquire work skills.

The curriculum should be altered so that there is provision for work experience other than the summer vacation period. This should be during busy nursery seasons when work experience would be most meaningful to the student.

To cooperate in occupational experience programs, nurserymen are seeking students who have acceptable work attitudes. When this prerequisite can be met, the nurseryman is most willing to cooperate with the college and the student in providing an opportunity for the student to learn the everyday work language of the industry as well as to take part in the day-ty-day operations.

There should be an understanding between the nurseryman and the teacher as to when the nurseryman may make an approach to the student regarding full time employment after graduation for those he might like to have on his staff permanently.

A list of the competency areas of interest to nurserymen in considering employees is available upon request. The folder "Career Opportunities in the Nursery Industry" is also available.

Nurserymen more than ever are seeking technically trained employees and recognize that they have a responsibility in providing work experience in the training of those employees.

Jesse A. Taft*

Agricultural educators have long recognized the need and value of adequate occupational experience. All students in preparatory programs of instruction have been required to participate in a supervised occupational experience program with the help of the agricultural instructor. These programs should be designed to provide varied experiences essential to the individual's occupational objectives.

For those students whose occupational objective is production agriculture, supervised practice programs are best conducted on a farm. Usually they fall in one or more of the following categories:

1. Productive enterprises with or without improvement projects.
2. A partnership or share agreement on the farm at home or with a neighboring farmer.
3. Placement on a farm for supervised occupational experience.
4. Productive enterprises and/or supervised occupational experience.

For those students in post high school programs - students whose occupational objective involves knowledge and skills in agricultural subjects may meet their supervised practical experience requirement through any of the categories previously mentioned. Practical, field, laboratory, or directed occupational experience at a greenhouse, nursery, or other agricultural business related to the student's occupational objective may also provide occupational experience.

As the number of programs on the junior college or institute level offering training in off-farm agricultural occupations increase, the problems associated with providing adequate occupational experience are also likely to increase. For these students, occupational experience can best be provided through a cooperative occupational experience program.

Cooperative occupational experience can be successful only when certain basic conditions exist in the school and community. These basic conditions are:

1. Does the philosophy of the school recognize the value of cooperative occupational experience?
2. Is the patronage area suited to a program of this type?

Much of the success of this type of program hinges on the quality of experience that is given at the training station.

Relative to the community, the following questions should be answered:

1. Does the patronage area have a sufficient number of agricultural businesses or firms that can provide training stations?

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*Field Representative, Agricultural Education, U. S. Office of Education, Boston, Massachusetts.

2. Can the potential employers be interested in the program and persuaded to give it adequate support?

3. Are the conditions at available training stations such that the students can be employed throughout the year or of sufficient duration of time to obtain experiences in all phases of the business?

4. Will the available training stations provide the students with the experience that is closely related to the instruction provided at school?

Selecting Training Stations

An important factor in determining the success of the program is the adequacy of the training station. The following items should be considered in selecting training stations:

1. Type of Occupation - the training station should provide experience in an occupation that requires some knowledge, understanding, and skill in agriculture.

2. Opportunities for Rotation - one which provides a wide range of experiences associated with the occupation. It should not be just routine work experience of a repetitive nature.

3. On-the-Job Supervision - a training station in a position to provide someone capable of serving as an on-the-job instructor.

4. Business climate - the training station should use ethical business practices and leave a favorable impression with the student.

5. Facilities and Equipment - in order to provide adequate training, the training station should possess adequate facilities and equipment and use up-to-date methods.

School laboratories and equipment will provide the student with certain skills and abilities. However, it takes a quality occupational experience program to make it truly educational in nature. This will be realized if the experience program is planned and conducted under close supervision by the instructor, the employer, and representative.

PLANNING CURRICULUMS FOR VOCATIONAL TECHNICAL EDUCATION IN AGRICULTURAL OCCUPATIONS

Dr. Raymond Clark*

Summary of Remarks

In order to provide a background on the subject of "Planning Curriculums for Vocational Technical Education in Agricultural Occupations" let me briefly review "Criteria for Identifying Occupations that Require Technical Education", as they are described in the U. S. Office of Education, bulletin No. OE-80015. These are as follows:

1. Applies knowledge of science and mathematics extensively in rendering direct technical assistance to scientists or engineers engaged in scientific research and experimentation.
2. Designs, develops, or plans modifications of new products and processes under the supervision of engineering personnel in applied engineering research, design, and development.
3. Plans and inspects the installation of complex equipment and control systems.
4. Advises regarding the maintenance and repair of complex equipment with extensive control systems.
5. Plans production as a member of the management unit responsible for efficient use of manpower, materials, and machines in mass production.
6. Advises, plans, and estimates costs as a field representative of a manufacturer or distributor of technical equipment and/or products.
7. Is responsible for performance or environmental tests of mechanical, hydraulic, pneumatic, electrical, or electronic components or systems and the preparation of appropriate technical reports covering the tests.
8. Prepares or interprets engineering drawings and sketches.
9. Selects, compiles, and uses technical information from references such as engineering standards, handbooks, and technical digests of research findings.
10. Analyzes and interprets information obtained from precision measuring and recording instruments and makes evaluations upon which technical decisions are based.
11. Deals with a variety of technical problems involving many factors and variables which require an understanding of several technical fields.

In summary, we can think of the technician as one who has abilities and skills together with technical knowledge so that he can perform tasks in support of the professional. He is the person who can take the ideas of the professional and translate them into an action program.

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*Professor, Agricultural Education Department, Michigan State University, Lansing, Michigan.

Three assumptions which were made to identify the competencies needed by workers in the Grain, Feed, Seed and Farm Supply Industry:

1. That teachers will take their students where they are and develop their skills, abilities, knowledges to as high a degree as possible in the time alloted to them.
2. That competencies can be taught to varying degrees of proficiency,
3. That key persons, such as managers, personnel directors, and supervisors can identify the competencies needed by their employees.

On the basis of these assumptions, a list of competencies was developed and checked by managers and supervisors of grain, feed, seed, and farm supply businesses in Michigan.

Specialized Technical Courses

The courses chosen to label as technical courses included:

1. Agricultural Chemicals
2. Applied Animal Husbandry I: Beef, Sheep, Dairy
3. Applied Animal Husbandry II: Swine, Poultry, Horses
4. Crop Production
5. Feeds, Ingredients, Additives and Food and Drug Regulations
6. Grain Grading
7. Grain Handling, Warehousing and Merchandising
8. Operations I: Purchasing, Financial Control
9. Operations II: Functions of Management, Financing
10. Physical Facilities and Care of Equipment
11. Retail Farm Supply Merchandising
12. Seed Production, Preparation and Analysis
13. Soil Science II: Fertilizers
14. Structure of the Grain, Feed, Seed and Farm Supply Industry

Technical courses are obviously those that relate to the basic technical abilities, skills, and knowledge necessary for a technician in the industry.

Basic Science Courses

These are the courses which support the technical courses and without which students would not be able to understand the technical content. The following are in this category:

1. Applied Animal Biochemistry
2. Applied Animal Nutrition
3. Soil Science I: Fertility

These courses are needed by students to provide a foundation and background for the technical courses.

Language and Communications Courses:

The advisory committee placed a great deal of emphasis on the importance of communication. Much might be said about the many facets of communication and the importance of each one. In our program we listed the following course titles:

1. Agricultural Economics and Marketing
2. Business Law
3. Communications I: Written, Graphic
4. Communications II: Oral, Illustrated
5. Salesmanship
6. Seminar: Personal Relationships, Personal Finances and Management

Occupational Experience

A strong recommendation for including occupational experience with appropriate coordination as part of the training program is included in the curriculum guide.

Selection of Students

High standards must be established and maintained for the program. Students should be admitted to the program only when they have adequate backgrounds of mathematics, science, social science and English together with acceptable attitudes toward work, willingness to accept responsibility, and satisfactory physical ability to perform well in the program.

Other Features of the Guide

Other portions of the curriculum guide include suggestions for library, laboratories, a bibliography, recruitment and training of teachers and others.

It is essential that the teaching staff be able to apply their respective subject matter to the grain, feed, seed and farm supply industry.

In implementing the program, three steps are necessary and should be taken almost simultaneously:

1. Organize an advisory committee to represent the area to be served.
2. Coordinate efforts of local educational institution with needs in a state or region.
    a. It is better to have one, two or three real strong programs in a state than to have a large number of weak, poorly staffed and under-equipped programs.
3. The development of instructional materials.
    a. Team up with industry to tap the resources they can offer to prepare printed materials that apply subject matter to the needs and activities of the industry.
    b. Included in the materials will be laboratory manuals, visuals, video-tapes, and others as well as the more basic text materials.

SIMILARITIES IN RELATED INSTRUCTION FOR TECHNICAL AGRICULTURAL OCCUPATIONS

Dr. Walter T. Brooking*

Summary of Remarks

As each of you have listened to the curriculum guides presented, you might have wondered how each of these fit into a common area and how they will effect you. Many of you have different areas of responsibility. These are for your information, and certainly are a "guide" as far as the whole field of the curriculum concept is concerned.

As described, you know that curriculums come into being only when they meet the prescribed perimeters of activities. The advisory committee approach is a very important part of the curriculum guide.

A curriculum outline is basically a plan for the use of educational tools, developed to serve a national need, and the outline reflects no individual institutional program. As a tool, the more you comprehend certain things about the curriculum and the thinking that has preceded the curriculum, the better equipped you will be to help those people who will be building curriculums.

The emphasis should be on the technical specialty, because this is the basic reason for the curriculum to come into being. The technical courses as taught in the laboratory and the classroom are the heart of the whole curriculum. Underlying each one is the basic science and mathematics. The underlying science for Farm Machinery, for example, is Physics or Applied Physics. In Food Processing, Chemistry is the science underlying the basic program. I would like to discuss the common related instructional areas at this time.

Number one would be the technical specialties, and the basic underlying sciences which most certainly go together.

Secondly, the related group of studies which may have different names but which fall into similar categories.

In all the programs, we are talking about the college level instruction which carries the college hours and courses in the curriculum. These related groups of studies can be a source of great satisfaction or they can be the source of some of your most difficult problems. If the philosophy can be adopted that the technical program is an objective of the institution and is equally as important as any other program, such as the liberal arts or a transfer program, harmony will prevail. If you have a dichotomy in institutions where you have liberal arts or transfer programs and a technical program on the other hand, then there will be problems existing.

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*Program Specialist, Technical Education, U. S. Office of Education, Washington, D. C.

The faculty should have the same degree of support for the occupational courses as they do for the transfer program. The problem is that the faculty does not often understand the technicians or the occupationally oriented students and part of their lack of understanding is sometimes our fault. Many times we have not really communicated with these people or the top administrative people have not helped to make the environment suitable for the occupational students. The temptation is great in the larger schools where they have an English Department to have one course for all students. This is not right. The language requirements and the subject interests of these persons who are to be technicians are in many respects different from the college bound four-year students. The English Department should understand their objectives, and should be sympathetic to the technically trained students. The English Department should offer both oral and written communications.

The third area, Sociology, should be pointed toward citizenship or family understanding within the framework of the community, state, and nation. Usually this is taught in the curriculums for a full year, giving three credits per semester. In the Humanistic Social Science, the other frame of reference is the person-to-person relationship. This is usually not included in the guide because it is the most difficult to be taught. It is difficult to find people whom we can be assured will responsibly teach this important course. Students should take a course in Sales Psychology. They should know about their appearance and how if affects their relationship with other people. They should understand their relationships with other people and know how these relationships affect their ability to secure and maintain their positions in the business world. So often when we attempt to teach this, we find that we get Elementary Psychology for the four-year people, or Elementary Educational Psychology. These courses are not usually interesting for the occupationally oriented students. It is generally recognized that this type of human relationship course is necessary for our occupationally oriented students, but we do have problems when we have the regular psychology teacher administer these courses. This is the least frequently found Social Science subject in the curriculum. It probably is taught daily in the classroom and the laboratory by person-to-person contacts.

Some orientation is usually offered to the students regarding how to interview for jobs, and how to get along with people in planning for their occupations. Unfortunately, there is not adequate space in the curriculum to teach courses of this type. If a youngster is technically competent, he is very attractive to an employer, and if he has communication skills, a foundation in economics and sociology, the employer will probably move him along to supervisory capacity, as long as he is able to get along with other people.

In summary, I would simply say, course by course, name by name, you will find Social Sciences, Economics, and the technical courses with their applied science and mathematics background as a part of all curriculums.

INITIATING AGRICULTURE CURRICULUMS IN A POST HIGH SCHOOL INSTITUTION

Community College - C. W. Dalbey*

I. Programs must be based on sound democratic philosophy
  A. People must feel that they are part of the program
    1. Consult key leaders
      a. Industry, Farm organizations, Lay people, School Representatives

II. Be alert to changes and needs within your state (new programs)
  A. Population structure
    1. Income changes
    2. Population losses or gains
    3. Employment changes

III. Know the power structure in your state
  A. Positions of strength and influence
    1. Publicity
    2. Legislators
    3. Education
    4. Other areas

IV. Make use of Councils in planning programs
  A. The part it plays in success
    1. Use in Evaluation
    2. Use for organizing Course Content
    3. Use in Placement

V. Changing the Educational Image
  A. Publicity mediums and contacts
    1. Talks to service clubs, banquets
    2. Enlist support of key publicity people - newspapers, radio, farm magazines
    3. Strive for top relationships
    4. Use of printed matter, course descriptions
    5. Letters to guidance counselors
    6. Service letter to teachers of vocational agriculture

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*Chief, Agricultural Education, State Department of Education, Des Moines, Iowa.

VI. Operate a Sound Program

  A. Evaluation

    1. By Council

    2. Key leaders

    3. Business Managers

    4. Local work experience stations

    5. Strong Teaching

Area Vocational Technical School - Earl Baugher*

The following problems are associated with initiating curriculums in agriculture:

1. How do you determine specific training needs in agriculture?

    a. Businessman
    b. Farmer
    c. Student demand
    d. Survey

The best of these is the survey. In a survey, all agricultural businesses should be visited to determine the number of employees, turnover, and expansion possibilities over the next several years.

After the decision of course selection has been made, the curriculum has to be developed around the significant competencies which students would be expected to acquire. These competencies have to be determined with accuracy, so several visits should be made to businesses of a type related directly to the proposed course. Business managers are glad to point out desired competencies and much useful information can be gained.

Urge anyone involved in starting a new course to make use of an Advisory Committee. An active Advisory Committee can render invaluable aid in curriculum planning and evaluation.

2. Must take advantage of facilities available until new facilities can be provided.

3. Competent instructors are a necessity as a new curriculum is initiated.

    1. Specialists from the field of agriculture.

    2. Vocational Agriculture teachers.

It is a matter of finding the right man for the job and providing enough attraction and challenge to make him want the position.

4. Students must be attracted to the curriculums.

    A. Point out the need for agricultural technicians in the field.

    B. Use various methods to make students aware of the proposed course and the future it may hold for them as individuals.

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*Vocational Technical School, Beloit, Kansas.

C. Make personal contact where possible, make use of TV, radio, newspapers, brochures, and have representatives of the school attend career days at the various high schools of the area.

D. School representatives should always be available to present programs to civic clubs and other organizations.

Four-Year College - David F. Shontz*

Expanding automation and technology are rapidly changing the occupational structure of the nation. Innovative, high-quality vocational-technical education programs of less than the baccalaureate degree, but above the high school level, must be developed to meet the challenging situation. Educational and industrial leaders are rapidly becoming aware of the growing numbers of technician type career opportunities that are available to young people today.

The Rhode Island State Board for Vocational Education has approved a plan to offer post high school vocational-technical education at three proposed community or junior college centers, and adult training and retraining courses at the site of the present state operated vocational-technical high school. Vocational-technical education at the high school level would be offered in eight regional, comprehensive secondary schools scattered throughout the state.

Determination of Need

Many factors have been considered by the College of Agriculture in determining the need for post high school vocational technical programs. One of the important considerations has been the large number of requests from prospective students.

Determination of Priorities

Because of the need for programs in many agricultural areas, priorities had to be determined. Two of the criteria utilized dealt with the feasibility of a particular program at this institution and the application that program might have on a regional basis.

The College of Agriculture faculty voted to proceed with plans to establish vocational technical programs in two major areas - Fisheries and Ornamental Horticulture and Turf Management.

Objectives

The specific objectives for this developmental program are:

1. To establish and evaluate a 13th and 14th year vocational technical program in the areas of commercial fisheries, ornamental horticulture and turf management.
2. To develop and appraise an organized program of individual counseling, placement and follow-up of graduates.

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*College of Agriculture, University of Rhode Island, Kingston, Rhode Island.

3. To demonstrate a curriculum organization that includes a supervised individual cooperative education experience.
4. To effect a definite articulation with leaders in industry and with appropriate instruction at the high school level.

University Approval

Tentative curriculums for the programs were developed by University, Agricultural Business, and Industry personnel and this program was forwarded to the Curriculum Committee of the College of Agriculture. The proposal was then sent to the University Faculty Senate Curricular Affairs Committee for approval. The proposal was transmitted to the University Administration, was approved by the President, and presented by him to the Board of Trustees for final approval.

During the development of the proposal, we have attempted to keep the faculty, administration, business and industries concerned and the State Department of Education fully informed through consultation and periodic progress reports.

A planned informational program will be developed in order to acquaint prospective students with the opportunities for training as agricultural technicians and for employment upon successful completion of this training.

It is recommended that each candidate for admission take the Scholastic Aptitude Test, the General Aptitude Test Battery, and the Interest Checklist.

A 300 hour minimum placement training program, or its equivalent, is being planned for students during or between the first and second years.

Staff members will be selected who have a Master's Degree and a vocationally-oriented type of training, and a broad practical experience background including at least two years service as successful teachers or technicians is desired.

The advisory committees will be drawn from widely representative groups on a regional basis, and will be composed of individuals who are competent in their respective fields.

In the planning of adequate facilities and equipment, the objectives of the program have served as the basic guidelines.

Problems

The following statements indicate some of the problems to be dealt with in developing a program of this type:

1. Convincing University personnel that we can provide the most desirable setting.
2. Essential and elective courses to be included.
3. Criteria for selecting students.
4. Plans for developing an understanding of the program on the part of school administrators, guidance personnel, teachers, and parents.
5. Developing criteria for program evaluation.

TECHNICAL EDUCATION IN AGRICULTURE AS ASSESSED BY MEMBERS OF ADVISORY COMMITTEES

Summary of statements from Panel Presentations

Alan H. Lamb*

In this day and age with the constantly growing need for more and more education, a greater than ever emphasis is being placed on our technical schools.

It seems to me that our educational programs of today are creating a larger than ever need for education of the average citizen, and our society is predominantly made up of average people.

In our own industry, I sincerely believe that we will rely more than ever on the agricultural and technical schools for the replacements which our dealers and companies so desperately need. These schools do a very good job in teaching the basics of mechanics, parts merchandising, salesmanship, accounting, and managing. In addition, our technical schools are doing an increasingly better job of teaching our young people the need for loyalty, cleanliness, promptness, courtesy, thoroughness, and ambition.

Many of our young people are opposed to the thought of attending a four-year college upon graduation from high school. A certain number of them, however, can be convinced of the benefits of higher education and will go on to a two-year school.. At the time of graduation from the two-year school it is quite natural for many of them to go on for further education.

I am very much impressed with the way Cobleskill keeps up to date with the needs of the business communities which it serves. In our own area of Agricultural Engineering Technology, for instance, the department appoints an Advisory Committee made up of dealers, company personnel, and other industry representatives. At the committee meetings the members of the staff have told me that they welcome any and all questions and that they have benefited immensely from some of the ideas which are bantered around with no apparent answer at the meeting. The Advisory Committee members are given unlimited opportunities to talk to the students, both in groups, and individually. By placing key company personnel on the Advisory Committee, the Agricultural Engineering Technology Department has been in a fine position to receive much information useful to the department.

In the area of salaries, I believe that the teachers in the technical schools should be at least on a comparable basis with the teachers in other institutes of higher learning commensurate with the degrees which they hold.

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*Executive Vice President, New York Farm Equipment Dealers' Association, Hamilton, New York.

Many of our companies advise me that they would rather hire a young person from an agricultural and technical school for many reasons. He is a student they can work with and teach the more individualized needs which are required by their company.

When we think of the years ahead, it is absolutely necessary that we develop as many of the top physicists, chemists, and other scientists, as possible. It is also imperative that we develop the people to handle the operational needs of the inventions of these scientists and intellectuals. These people will come from schools comparable to Cobleskill.

Charles S. Mix*

Horticulture is rapidly becoming a specialized business.

My contact with Cobleskill College dates back to 1933, when students were paid $1.50 per day by the National Youth Administration to work for florists to obtain practical experience along with college courses.

The Advisory Committee for Ornamental Horticulture at Cobleskill College was formed about 10 years ago. It is usually made up of three florists, a nurseryman, wholesale supplier of floriculture and nursery supplies, and a garden center operator.

This committee meets both with faculty and students. Curriculums are reviewed, job opportunities are discussed, wages evaluated for student training and employment and facility needs evaluated.

The committee acts as a public relations medium and endeavors to interest young people in ornamental horticulture by speaking at schools and to youth groups. Also, the committee helps in the placement of students.

The rapid urban development, shorter work week, demand for more recreational facilities, and greater interest in landscaping and flowers makes it imperative that we of the advisory committee and the faculty of the college work together.

Raymond Murray**

Agriculture is becoming an increasingly complex business. As it becomes more complicated, the need for technical knowledge multiplies in an almost unbelievable fashion.

It is apparent that modern agriculture must have technical education available to survive in this era of mechanical and chemical miracles.

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*Owner-Manager, Mix's Greenhouses, Schoharie, New York.

**Manager, Farm Co-operative Credit Agency, Cobleskill, New York.

Technical education is a must for agricultural production, however, it is in the fields of related business that the Agricultural and Technical Colleges may provide their greatest service. Many more people work in the service, selling, and distribution area of farming than in the production of food.

In my area of work, farm loans, technical knowledge has gone from a desirable quality in an employee to an absolute necessity.

Knowledge and management are the basic collateral that a farmer must have today to borrow in the farm credit field. In order to make loans of this kind, the farm credit man must have at least an equal knowledge of farming in order to make a sensible judgement.

We have found two other qualities which I think speak very highly of the two-year technical agriculural college.

1. A desire to succeed , and,

2. A sense of responsibility.

As a member of an advisory committee at this college, I have had a good chance to observe the workings of the college. Each advisory committee member is made to feel a part of the college. Regular meetings are held and we are encouraged to offer our opinions.

I like the name "Agricultural and Technical" College. I believe every effort should be made to keep these institutions Agricultural and Technical Colleges. I would like to be assured that we keep the "how" in our technical schools,and leave the "why" to the universities.

PLACEMENT AND FOLLOW-UP OF GRADUATES

Robert R. Stockbridge*

Summary of Remarks

Introduction

Placement and follow-up of the graduates of technical colleges is a very integral part of the educational life of students. It must never be anything but very personal, and cannot be accomplished if attempted by the bulletin board technique.

When does it start?

It starts with the College Catalog and the Admissions Officer as he or she talks directly with prospective students and/or their parents. It is continuous from the day of entrance to the time when letters to the address of the graduate no longer result in a response.

Professors must be easy to talk to and obtainable for conferences if counseling and placement are to be effective educationally. Every person teaching must work at "knowing" his students and the data accumulated within the department, and this effort starts with the first classes and is continuous from that time on.

Who is to do it?

Everyone on the teaching staff is involved, and perhaps others connected with the college from time to time. Some departmental meetings each semester should be devoted to the discussion of students on an individual basis. Every teacher should post schedules and definite office hours for student talks. In addition, every teacher must also be available for special appointments.

Suggestions from teachers concerning deportment, attitudes and impressions should be forwarded to department heads and division heads who should work jointly keeping records current. Summary sheets from the advisor, department head, and division chairman should go to the students' file for use when required. These people must also gather information about graduates and their ideas, knowledge, and the job opportunities they learn about, but such information must be gathered constantly and accumulated where it can be utilized fully.

How is this accomplished?

Through the following:

1. Basic departmental information card and picture.
2. Having the Department Chairman teach one course to Freshmen.

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*Chairman, Agricultural Department, State University of New York, Agricultural and Technical College, Farmingdale, New York.

3. Departmental meetings to talk over students and their accomplishments with notes being recorded on the basic departmental information cards.
4. Grades and Evaluations being done on a departmental basis at the end of each semester.
5. Departmental Advisor program to be augmented by the classroom teacher-student relationship, plus the casual talks that should evolve with many students without being required.
6. Evaluation Sheets to be filed in the student's main office folder.
7. Department Heads and others should learn of the students' objectives so as to better guide and direct for better eventual placement.
8. Educational desires, job wants, or expectations should be somewhat finalized early in the fall of the second year and suggestions and plans formulated and executed.
9. Students should apply for positions and have resumes and photographs properly prepared and ready early in the last semester.
10. Positions which come directly to the college should be offered to students who are best qualified, and not posted on a bulletin board. If a bulletin board is to be used, then only the job descriptions should be posted.

What is really meant by follow-up?

Many methods should be utilized, letters and questionnaires are the cheapest and easiest, however, Homecoming Day and an Open House represent a good method of securing information providing people take down work addresses and other pertinent data. Ideally, each faculty member should visit organizations within his technology and meet with graduates already employed in the organization. Every three to five years, every graduate should be questioned in regard to his progress and his present job classification and additional education since graduation. Such information, coupled with further correspondence, can be very fruitful in course and curricular changes.

Why bother anyway?

Continuing identification with those institutions that have been a part of our education can be fruitful to the individual and the institution. As the alumni is an ever growing group, the sheer numbers alone can be impressive in time of needed support.

Job opportunities for graduates who have been out a few years are ever-increasing so knowledge of accomplishments after graduation is becoming ever more important.

People who have received help through a good placement source often times return when they are in need of personnel.

Trends

Admission personnel seem to change frequently as do high school counselors. This necessitates frequent communication with this group by Department Heads on the technologies. What has happened to past graduates must be known by this group and they must be constantly up-dated.

The technical teachers must constantly be up-dated in respective technologies: reading, and talking may not suffice. They may be better prepared if they either work for short periods at a technical position, or attend special courses and institutes.

There is a definite trend at our college for additional education beyond the AAS degree. The facts are that many business organizations now hiring our graduates encourage more education and pay for part or all of the cost of additional courses which will add to the usefulness of the employes.

REPORT OF COMMITTEE ASSIGNMENTS

Curriculum

Dr. Raymond Clark, Michigan, Chairman
Walter J. Clark, New York, Recorder

Earl Baugher, Kansas
Al Erickson, Colorado
Raymond Potter, Massachusetts
Richard Geyer, Washington, D.C.
G. A. Sherman, California
R. L. Haywood, Missouri
E. C. Miller, Minnesota
L. D. Petty, Texas
Keith Stoehr, Wisconsin
Austin Ritchie, Ohio

Initiating Agricultural Curriculums and Recruitment of Students

C. W. Dalbey, Iowa, Chairman
Howard Sidney, New York, Recorder
J. G. Bryant, Georgia
Archie Rushton, Tennessee
Ralph Sylvester, Maine
Bill Stanley, Arkansas
George Lange, New Jersey
Fred Bauermeister, Michigan
Ralph Granger, New Hampshire
David Shontz, Rhode Island
Doyle Beyl, Wisconsin
Bill Gutshall, Missouri
Richard Ramsdale, Kansas
Bryl Killian, Oklahoma

Youth Organizations

Ralph Guthrie, Illinois, Chairman
Warren Harrell, Florida
E. A. Tarone, California
Norman Gay, Georgia
T. Dean Witmar, Pennsylvania
T. O. Beach, Arizona
H. W. Green, Alabama
Ted Kersting, Connecticut
W. E. Hohenhaus, Minnesota
Frank Wolff, New York
Ralph Bender, Ohio
Gary Blomgren, California

Facilities

Ralph Matthews, California, Chairman
Norman Foote, New York, Recorder
Morey Swift, Michigan
James Zepplin, Wisconsin
Byrl Law, West Virginia
George Cook, Oklahoma
Max Kuster, Illinois
Billy Smith, Mississippi
C. E. Richard, West Virginia

Faculty

Robert Siebrasse, Montana, Chairman
Ralph Smalley, New York, Recorder
Norman Curtis, New York
H. B. Drake, Ohio
B. E. Youngquist, Minnesota
C. G. Dawson, North Carolina
George Brookbank, Arizona
Ralph Barwick, Delaware
T. Donker, California
A. Najjab, Jordan
Malcolm Gaar, USOE
E. Mott, New York

Occupational Experience and Student Placement

Elvin Downs, Utah, Chairman
Robert Wingert, New York, Recorder
Eugene Walker, Kansas
George Marx, Minnesota
Stan Matzke, Jr., Nebraska
Everett Clover, Iowa
W. M. Harris, South Carolina
Paul Hillis, Illinois
Jesse Taft, USOE
Kenneth Mitchell, Tennessee
Warren Weiler, Ohio
J. H. Mitchell, Georgia
E. E. Gross, Mississippi
Roger Beaudoin, Mississippi
Robert Walker, Pennsylvania
Jim Nickell, Illinois
Edward Hartog, Minnesota

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REPORTS FROM COMMITTEE CHAIRMEN

INITIATING AGRICULTURAL CURRICULUMS AND RECRUITMENT OF STUDENTS

The primary purpose of the program should be to educate the individual for employment at the entry level in specific areas of agricultural industry.

Representatives of the occupational families should be considered as consultants in developing curriculums. In developing curriculums, those responsible should take into consideration existing courses and facilities available.

Initiating Curriculums for Agriculture in Post High School Programs

I. Who determines needs for programs.

   A. Administrators determine needs in cooperation with organizations and/or individuals such as:

      1. Agricultural implement dealers.
      2. Horticultural organizations.
      3. Grain, Feed, Seed, Fertilizer and Pesticide dealers.
      4. Grain elevator operators.
      5. Employment agencies.
      6. Advisory committees.
      7. Others interested in employing individuals in agricultural occupations.

II. Procedures to follow in initiating curriculums for Technical Agriculture.

   A. The idea for a program may originate from an individual or a group within a state. The leadership for administering the program is usually assumed at the state level either by a representative of the State Department of Education (State Board of Education) or university system governing body.

   B. A well selected and representative advisory committee is essential to the success of the program.

   C. The committee working with the administration assumes the responsibility of determining educational needs based on potential employment opportunities and in addition functions in the following areas of responsibility:

      1. Financial support.
      2. Curriculum development.
      3. Teacher Procurement.
      4. Development and promotion of student interest.
      5. Facilities.
      6. Student selection.

7. Provide occupational experience.
8. Student placement.
9. Program evaluation.
10. Public relations, including improving occupational image.

III. Recruitment of Students for the Programs.

A. Who should be involved.

1. The administration and/or others responsible for the program should assume the responsibility of utilizing the various communications media to acquaint the general public, and especially potential students, with the curriculum offerings, employment opportunities and student accomplishments.
2. Counselors should assume specific responsibilities in an organized recruitment program. (If counselors are not fully acquainted with the program, the staff should assume the responsibility of orienting them).
3. Faculty or staff members or designated individuals should develop and distribute descriptive literature (brochures and/or pamphlets or publications) about the program. These should indicate curriculum content, program lengths, entrance qualifications, student activities, costs, and other pertinent information of interest to prospective students, parents, secondary school counselors, school officials, Boards of Education, and others.

CURRICULUM

PLANNING CURRICULUM FOR VOCATIONAL TECHNICAL EDUCATION IN AGRICULTURAL OCCUPATIONS

Definition of a Technician

The agricultural technician is an individual why may use a combination of applied agricultural and social science, engineering and business in the performance of an agricultural job. He performs at a level between the skilled worker and the professional and requires specialized training beyond the high school level.

General Philosophy

To design a curriculum that has breadth and depth to meet the area needs and to provide the individual a balanced program in the technical and general education fields.

Objectives:

1. To develop the abilities of the student in those competencies needed to prepare him for successful employment at the technician level in agricultural occupations.

2. To provide opportunity for the individual to have meaningful experiences in human relations, and to assist and guide him in becoming a more useful member of society.
3. To design courses that have application to the industry or occupation in which the individual expects to be engaged.
4. Preparing students to accept changes that may occur and require continuing education and/or future re-training and possible relocation.

Steps in Formulating a Curriculum

1. Determine the needs of local, state and nation.
    a. Examine existing surveys or studies.
    b. Conduct any surveys necessary to determine needs.
2. Consult with an advisory committee that is aware of the needs in agricultural occupations.
    a. Advisory committee should have employer and employee representatives.
    b. Advisory committee should have local and area representatives.
    c. The committee should understand their responsibilities.
    d. Establish communication media for the planning, promoting, operation and follow-up of the program.
3. Determine the types of training needed.
    a. Organize a consulting committee.
    b. Analyze existing surveys.
4. Determine where the training should be offered.
    a. Agencies that are helpful: State Employment Service
       State Advisory Committee
       State Board of Education
    b. Determine population centers.
    c. Consider the facilities available.
    d. Determine the supervised experience opportunities.
5. Plan a curriculum with the faculty and administration involved with the students' educational program.
    a. Work within the framework of the institution and its governing body.
6. After the program has been established, have a follow-up and evaluation in order to make changes that will be beneficial to the program.
    a. Evaluation by employer, instructor, and the student and/or graduate.
    b. Evaluations should be recorded whether they be formal, informal, oral, or written.

   c. Evaluations should be continuous.
   d. Formal evaluations should be periodic.

FACILITIES

The committee decided that the provisions for facilities would be affected by the philosophy existant on the campus, the type of institution, type of farming in the area, climatic conditions, and the plan for the overall development of the campus.

With the above conditions in mind, the committee established the following guidelines.

1. Land or site for agricultural department.
   a. Make use of the less expensive land.
   b. Purchase adequate land for expansion.
   c. Accessability and traffic flow should be considered.
2. Parking.
   a. Located so students do not cross road after parking.
   b. Identify all parking areas with special areas designated for small vehicles.
   c. Provide ample lighting and police protection.
   d. Provide spaces adjacent to building for service vehicles.
3. Buildings.
   a. Decide on type of building which would include height.
   b. Check minimum floor space per student in lecture and laboratory rooms.
   c. Machinery laboratories should have facilities for unloading and loading, welding area, tool space, adequate openings for large equipment.
   d. Consideration for accoustics and outside noises.
   e. Design of building should provide for adequate window space, ventilation, and air conditioning.
   f. Storage and office space should be adequate (one man in office preferred).
4. Classroom.
   a. Classrooms should be provided for small classes, tendency is for square classrooms.
   b. Larger classrooms should be elevated.
   c. Provide electric outlets, adequate lighting, motorized screens, sliding chalk boards, cork boards, T.V. equipment, audio-visual aids and intercom systems.

5. Farm.
    a. Operation of laboratories beyond educational experiences should be accomplished by personnel hired for that purpose.
    b. Provide comprehensive up-to-date experiences.
    c. Encourage use of student-owned projects.
6. Greenhouses.
    a. Depending on program, greenhouses may or may not be necessary, possibility that lath or plastic houses would suffice.
7. Miscellaneous.
    a. Provide adequate signs approaching facilities.
    b. Provide adequate signs identifying facilities.
    c. Indicate visitors area.

FACULTY

I. Introduction.

There is an extreme shortage of qualified teachers in the field of vocational, technical and vocational-technical education. The rapid development of post high school technical education institutions across the country multiplies this problem beyond our current comprehension. Our study in committee, because of time, was limited to three phases of this problem, mainly selection, development, and retention.

II. Selection of Faculty.
    A. Define the position opening.
        1. For administration.
        2. For employee.
    B. Publicize the job position.
        1. Publications, educational and trade journals.
        2. College placement offices.
        3. Direct contact to college departments of interest.
    C. Source of candidates.
        1. Vo-Ag teachers.
        2. College graduates.
        3. Industry.
        4. Retired people.
            a. Industry.
            b. Teaching.
            c. Military.

D. Select the best person available for the position.

  1. Check credentials.
  2. Check with associates and former associates.
  3. Use other staff members.
  4. Interview the candidate.

III. Development of in-service training.

A. Teacher education for post high school personnel.

  1. Recognizing the need, we recommend that teachers of technical agriculture keep up-to-date with workshops, extension courses, and regular courses. In addition, we recommend that the U. S. Office of Education, through Regional Offices, coordinate and implement programs of instruction annually for the benefit of post high school teachers.
  2. Recommend the U. S. Office of Education, through Regional Offices, poll all agricultural post high schools to identify and initiate the "Training Institute" most needed.
  3. Recommend that college credit be given for these institutes.
  4. Recommend that the U. S. Office of Education do what it can to eliminate "out of state" tuition for these institutes.
  5. Recommend that the college offering the institute training program use industry and their personnel for help in organization and instruction.
  6. Suggest that industries be encouraged to sponsor scholarships for these institutes.
  7. Suggest that contact be made with the National Science Foundation for assistance with summer institutes.

IV. Retention.

A. Urge schools at the post high school level to employ their vocational-technical instructors on a year-round basis. A definite plan of action for summer activities must exist and suggestions are:

  1. Curriculum planning.
  2. Professional improvement.
  3. Appropriate contacts with industry.
  4. Student placement supervision.
  5. Instructional development.
  6. Student instruction as related to seasonal opportunities.

B. Recommend that the U. S. Office of Education plan additional meetings of the present nature at frequent intervals to coordinate the development of the post secondary curriculums in agriculture.

C. In order to have a functional instructional staff, it is recommended that continued effort be exerted to elevate salaries and benefits so that the profession of agricultural technical teaching can be competitive with comparable opportunities in industry.

D. It is recommended that professional and industrial experience be given due consideration by financial remuneration.

OCCUPATIONAL EXPERIENCES AND STUDENT PLACEMENT

I. Occupational Experience.

A. Definition: Occupational experience is student participation in the operation and management of an agricultural business under a plan approved and supervised by the institution.

B. Philosophy: We believe that supervised occupational experience in agriculture is essential for an adequate educational program which will develop competencies needed by a student for gainful employment in an agricultural occupation.

C. Objectives:

1. Prepare each student for gainful employment in an occupation in his field of interest.
2. Provide students an opportunity to gain a sense of responsibility toward a job.
3. Provide students an opportunity to develop positive on-the-job personality traits.
4. Provide students the opportunity to apply in practice the theory and knowledges gained in the classroom.
5. Provide students the opportunity to learn to cooperate and work with fellow employees and customers.
6. Provide students an opportunity to gain knowledge and experience in aspects of the job not available at the school.
7. Enlist cooperation of prospective employers to insure an effective supervised training program.

D. Methods of Implementation of Supervised Occupational Experiences.

1. Select advisory committee or sub-committee for the area of specialization.
2. Select the work stations with help from advisory committee.
    a. Survey businesses by personal contact to determine the cooperators interest, and the availability of the facilities, personnel and training opportunities. Contact those businesses that you have selected for student work experiences, and consumate the arrangements.

E. Prepare Cooperative Work Agreements.

  1. A simple agreement with a statement of philosophy and the responsibilities of all parties including wages, insurance, taxes, working hours, and time off is manditory and should be agreed upon before starting the work experience.

F. Plan a Training Program to contain:

  1. A list of occupational experiences the student is to receive, with time requirements for each job experience.

G. Progress and Evaluation Reports.

  1. A permanent record for each student should be kept at the school. This would include the following:

    a. Employer's rating report.

    b. Instructor's rating report.

    c. Visitation reports.

    d. Copies of training plan.

    e. Copies of training agreement.

    f. Evaluation forms.

II. Placement of Graduates in an Agricultural Occupation

A. Definition: Graduate placement is the process of aiding the student to find and select employment following completion of the educational program.

B. Philosophy: We believe it is the duty of the institution to aid its graduates to enter gainful employment in their chosen occupations.

C. Objectives:

  1. Placement to be organized on an institutional-wide basis.

  2. To provide for assignment of responsibility for coordinating staff efforts in placement and so organized to involve all staff members.

  3. Involve regular cooperation with agricultural business employers and the employment office.

  4. Provide for keeping records of employment of graduates and continuing assistance to graduates.

  5. Provide for counseling graduates in conducting interviews and evaluating results.

  6. Provide continuing education whereby the graduates keep up-to-date and make progress in their vocations.

D. Placement.

  1. A placement coordinator should be appointed who will work closely with the Division Chairmen, Department Heads, and Faculty Advisors, his duties to include:

a. Contacting industries and businesses to learn of employment opportunities.

b. Maintaining a file on jobs and their descriptions.

c. Maintaining a file on each graduate with his resume.

d. Developing career days, interviews, and a posting system to keep applicants informed of opportunities.

e. Keep student's file current.

YOUTH ORGANIZATIONS

I. Statement of Point of View

We believe that youth organizations for post high school vocational technical agricultural students can make significant contributions by providing expanding and enriching experiences. These experiences should challenge and offer an incentive for the youth being served as an integral part of the development of the total instructional program.

We further believe that the organizations developed should be directed toward the specific needs of the age level of students involved, without weakening any present organizations committed to the same purpose at this or other age levels.

II. Objectives of Youth Organizations.

(HEW Bulletin OE-81011, 1966, No. 4)

A. To develop those abilities in human relations which are essential in agricultural occupations.

Contributory objectives are the abilities to:

1. Appreciate the dignity of work and the need for every individual to make maximum contributions toward his occupation, and to the advancement of his family, his community, and his nation;
2. Establish and maintain effective and ethical working relationahips with associates;
3. Communicate effectively;
4. Appreciate and follow desirable behavioral standards;
5. Develop acceptable personal and work habits.

B. To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities.

Contributory objectives are the abilities to:

1. Associate with and become a functioning member of an organization;
2. Identify and participate in desirable activities for developing and improving agricultural leadership;

3. Initiate activities that improve agriculture and the community;
4. Cooperate for the common good in agriculture and civic activities;
5. Develop and maintain desirable relationships between rural and urban groups;
6. Participate in the development of local, state, national, and international policies and programs affecting agriculture.

III. Procedures to Implement Objectives.

A. We favor implementing the recommendations proposed by the Ad-hoc Committee on Youth Organizations of the National F.F.A., which met in Washington, D. C., in May of 1966.

1. That encouragement be given to the establishment of local chapters or groups, separate from, but in harmony with, the present FFA structure, to serve the needs of youth at the post secondary level in area vocational schools, technical institutes, community and junior colleges.
2. That both the State and National staffs in Agricultural Education be encouraged to work with area vocational schools, technical institutes, and junior or community colleges in establishing, supervising, and coordinating the development of the post secondary organizations.
3. That the U. S Office of Education, through their regional agricultural representatives, study the needs of the states to determine if an organization is needed for youth at the post secondary level in area vocational schools, technical institutes, community or junior colleges.
4. That, if sufficient need and interest is indicated, the regional offices conduct conferences of students and teachers in post high school vocational and technical education programs in agriculture to develop outlining aims and purposes, administration, activities, and the nature and scope of State and National organizational structure.

B. We recommend that the Head Supervisor in each state, or his designate, shall be responsible for implementing additional assistance to area vocational schools, technical institutes, and junior and community colleges in establishing youth organizations as the need is evidenced, utilizing the present administrative structure for vocational agriculture in that particular state. (Such as advisory committees, regional supervisors, county coordinators, local agricultural teachers and coordinators as advisors, etc.)

C. We also recommend that in the consideration of the establishment of chapters, clubs, etc., at the local level, the present Young Farmer programs be included.

REPORTS FROM SELECTED STATES

The following pages are devoted to reports from thirteen states. A representative from each of these selected states was asked to report on the status of technical agricultural education at the post high school level in his state. The purpose was to inform the participants of the different degrees of progress that have been made in those states.

Another purpose was to explain the types of programs that are being offered and the kinds of schools that are offering the programs. Another interesting factor is the administration of the programs within the states.

CALIFORNIA - Ernest Tarone*

California has 77 Junior Colleges with 32 offering courses in agriculture. Modesto Junior College has 580 students and 18½ instructors. It offers courses in Animal Husbandry, Dairy Processing, Horticulture, Ornamental Horticulture, Crops, and Forestry. Instruction is vocationally based and there is emphasis on specific areas of technical information.

In developing new curriculums, industry is contacted and an attempt is made to involve industry in the actual training process. Industry may furnish equipment, instruction and, in the final analysis, job placement.

Evaluation is made at frequent intervals to up-date curriculums and opportunities in the field. As a result of a study of occupational needs, two new curriculums are being offered this year; "Recreational Land Management" and "Wildlife Production".

COLORADO - Hilbert Kahl**

Colorado is just starting to develop two-year colleges in agriculture. Several programs in agriculture are offered at the four junior colleges.

Three years ago we introduced a course in agriculture where the student goes to school for two quarters and then works at a supervised position for two quarters. We find this experience greatly matures students. Some problems have resulted as to the most appropriate time to free students for employment. We will need to evaluate our teaching schedule to make the best use of industry in occupational placement.

The Fertilizer and Farm Chemical curriculums are most promising. Placement opportunities far surpass the supply of students -- from five to ten times. We have placed students in 14 different states at salaries from $350 to $400 per month during occupational training, and graduates have received from $6,000 to $6,500 per year, to start.

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*Director of Agriculture, Modesto Junior College, College Avenue, Modesto, California,

** Chairman, Agriculture Department, Northeastern Junior College, Sterling, Colorado.

Industry is supplying scholarships to promising students with no obligation on the part of the student with regard to future commitments.

To develop the total student, we have a student organization which we call a corporation. It meets twice a month, requests speakers from industry, and plans the type of meeting where the students learn to socialize and develop the social graces.

Colordao has found that the success of any technical program will depend upon two very important factors.

1. A competent Advisory Committee, and

2. A staff that is familiar with the respective industry involved.

The background training and industry experience in his own field is necessary to be familiar with the problems and the requirements of the industry he is trying to serve.

CONNECTICUT - Edwin Kersting*

Connecticut has one post high school program for students interested in two years of agriculture. The Ratcliffe Hicks School is located at the University of Connecticut, at Storrs.

In the fall of 1966, the expected enrollment will be 175 students. It is anticipated that there will be more students enrolled in the two-year program than in the four-year program in a very short time. The number of female students enrolled has increased and the largest number to date is expected for the fall of 1966.

In order to matriculate at Ratcliffe Hicks, the individual has to be a high school graduate, with a good citizenship record and a farm background, or he must submit an agri-business work experience letter. Admissions are through the Director of Admissions at the University of Connecticut, but each individual student is reviewed and approved by the Director of the Ratcliffe Hicks school. A student completing a year with an "A" average has the opportunity to transfer to the regular four year program or if he should desire to transfer after the second year, he may do so with a "B" average, pending final approval of the Dean of the College of Agriculture.

There are eight programs offered:

Animal Husbandry
Dairy Husbandry
Dairy Manufacturing
Floriculture
Food Handling and Distribution
Fruit and Vegetable Production
Nursery Management
Poultry Science

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*Director, Ratcliffe Hicks School, School of Agriculture, University of Connecticut, Storrs, Connecticut.

Each student is required to complete a summer placement program before graduation. The student is awarded a certificate, not an Associate in Applied Science degree.

There are 60 staff members who have teaching, research, and extension duties.

New programs may be initiated without the approval of the College Senate, Board of Education, or State Board. They must be passed by the Provost. Usually the classes are held separately for the two and four year students, however, all of the students have the rights and privileges of all university students with the exception of intercollegiate activities.

The employment opportunities far exceed the supply of graduates. The FFA and 4-H are encouraged to use the facilities on campus.

Ratcliffe Hicks is responsible for all of the short courses in agriculture. There were 1400 served in a variety of offerings during the past year.

GEORGIA - J. G. Bryant*

There is one program being conducted in Georgia at Abraham Baldwin Agricultural College, Tifton, Georgia. The institution is a Junior College of the University system, operated under the Board of Regents.

The program is identified as: Equipment Technology Course.

It is an academic and technical program especially designed to train young men in the repair, service, use and distribution of farm equipment. The students spend five quarters at the college and one quarter in placement training. The primary objective of this program is to train men in the management field on the farm equipment dealer level. During the first year of training the course offerings include: Agricultural Production, Mathematics, Fundamentals of Engine Design and Operation, Hydraulics, Diesel Pumps and Injectors, Farm Equipment Business Operations and General Shop.

The first quarter of the second year the course offerings are Salesmanship and Personality Development, Speech, and Service Shop. In the Service Shop the students actually do the service jobs that must be performed in the farm power and equipment field.

The winter quarter is devoted to placement training - each student spends the quarter in training with an approved equipment dealer. This period is really an important part of the program, because here it is determined if the trainee is suited for the farm machinery business, and what division of the business he is best suited to.

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*State Supervisor, Agricultural Education, State Department of Education, 258 State Office Building, Atlanta, Georgia.

The final quarter program offerings include Communication Theories and General Education courses.

Degree

Students completing the prescribed course of study are awarded the Associate Degree.

Placement

In the eight years the program has been in operation, 99 graduates have been employed in farm implement businesses. Forty-three of these in dealer service work, twenty in parts, ten in sales, thirteen by major farm equipment companies, eight by short line companies, and five are owners or part owners of dealerships.

This accounts for 70 per cent of the students who have completed this program. Those who do not enter the farm equipment field either go back to the farm, enter some other agricultural business field or continue with their college program. In 1965-66, 70 students enrolled in the program. About 10 job opportunities are available for each graduate from the program.

Other Programs

A new program is being activated in one of the state vocational and technical schools located near Americus, Georgia. It will be operated under the State Board for Vocational Education.

The program, as planned, will be to educate for employment in farm implement businesses, and will be identified as Farm Implement Mechanics. Provisions are being made for 20-25 students. As a supplement to the program above, 10 programs will be conducted in 10 secondary schools of the state beginning in September, 1966.

Faculty Development

Fifteen teachers of vocational agriculture from selected schools in Georgia have received in-service training in farm and power equipment with a view of putting a class of this type in the selected high schools in Georgia.

Pilot Course in High Schools

The course will be an elective course for high school students in the upper two grades. The course is being activated because of the tremendous demand for workers in the field of farm and power equipment, both at the farm operational level and to cover the need for workers by farm equipment dealers.

The courses to be taught in the ten pilot schools next year will be carefully evaluated with a view of expanding the program to additional high schools.

The students who complete the high school course may make one of four choices:

1. Accept employment on a farm.
2. Accept employment with a commercial equipment establishment.
3. Enroll in the program at Abraham Baldwin Agricultural College or the Vocational Technical School at Americus for additional training.
4. Enroll in a four-year college program.

ILLINOIS - Paul H. Hillis*

At the present time Illinois has 28 junior colleges, five of which have been approved to offer technical agriculture at the post high school level.

Each junior college conducting an occupational type course develops its curriculum according to the basic needs of the curriculum and the student. We feel that our basic task is to train students for an occupation where a great deal of concentrated effort and practical experience is needed if the students are to obtain the skills necessary for gainful employment.

Joliet Junior College is offering a course in Agricultural Supply. There are 115 students enrolled and 3½ teachers. Most of their graduates find employment in the feed, seed, and fertilizer industries.

Danville Junior College is offering three Agricultural Technology programs. There are 61 students enrolled in Ornamental Horticulture, with three full time and five part time instructors. The curriculum is divided into six major areas to comprise Landscaping, Nursery Management, Turf Management, Parks and Grounds Maintenance, Greenhouse Management, Floriculture, and Floral Design.

The Farm Mechanics program has 25 students enrolled and is taught by two full time and two part time instructors.

There is a Production Agriculture Curriculum with 25 students enrolled, having one full time and two part time instructors.

Woodrow Wilson Junior College in Chicago has 45 students enrolled in Ornamental Horticulture. There are two full time instructors.

Wabash Valley Junior College in Mt. Carmel has two courses in operation. There are 66 students enrolled in Farm Mechanics. Here again, these students are being trained for the farm machinery and equipment industry. There are 70 students enrolled in Agricultural Business. These two programs are staffed with six full time instructors.

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*Chairman, Department of Farm Machinery Technology, Canton Community College, Canton, Illinois.

Canton Community College in Canton has 89 students enrolled in Farm Mechanics Technology. These students are being trained for the farm machinery and equipment industry. The program is staffed by seven full time instructors.

We are experiencing a situation in our state wherein we are not able to meet the demands of industry. Therefore, we are looking forward to the establishment of more technical courses in agriculture at the junior college level.

The master plan for higher education calls for a speed-up in the number of college districts within the state, geographically distributed, to bring higher education within commuting distance to a maximum number of students. The law requires that all state supported junior colleges must have a minimum of 15 per cent of the student body enrolled in occupational courses.

I would like to emphasize three areas that we in Illinois feel are essential for the successful establishment and carrying out of a thoroughly successful program.

1. An effective Advisory Committee, holding regular meetings.

2. Selection of a proper staff. Many of the programs being instigated are very technical in nature, requiring a great deal of training and experience. For this reason, we encourage bringing in personnel from industry to become members of the staff.

3. Cooperative work experience. For proper student work experience, great care should be taken in the selection of training centers.

In Illinois we have established a systematic method and procedure for the evaluation of the various technical programs. First, we evaluate the students as they come into the program. The second evaluation comes after the first supervised work experience period. The third will be made in October, following graduation, and we will then make follow-up evaluations at three to five year intervals.

IOWA - C. W. Dalbey*

The legislature in Iowa has made plans to establish 16 area vocational schools which will have post high school programs. Muscatine Junior College, located in the eastern section of Iowa wanted to start a Feed and Fertilizer course in 1965. The course was approved and 35 students were enrolled for the fall of 1965. In 1966, 48 students have applied and have been admitted, to increase the enrollment to a total of 75 students for 1966-67.

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*Chief, Agricultural Education, State Department of Public Instruction, 542 State Office Building, Des Moines, Iowa.

At Cedar Rapids, a course has been started in Floriculture and they have 30 students enrolled for the fall of 1966. At Mason City, one of the larger junior colleges has started a curriculum in Agricultural Equipment Technology. This will prepare students for the Farm Machinery Industry in the servicing and repair field. The course will have two or three teachers in the fall of 1966, depending upon enrollment, and it is anticipated increasing to five to six teachers in 1967.

KANSAS - Eugene Walker*

Kansas has just started their two-year post high school technical training. There definitely is a need for two-year post high school training because of the agricultural industries located in Kansas.

At the present time, 13 area vocational schools have been approved, nine of which will offer some type of agricultural education. They serve an average area of 50 miles radius and some of the schools serve high school, post high school, and young adult farmers. They offer on-farm work experience in some of the programs.

The courses vary in the nine area vocational schools and the following curriculums are being offered:

Agricultural Technology

Farm Mechanics Program, covering diesel and gas engines

Technical Agricultural Program, including farm services

Nursery and Greenhouse Training

Livestock Sciences

Crops and Sciences

Farm Management

Irrigation Technology

The area vocational schools will be serving the post high school students in the future. Several of these area vocational schools will be moving toward a course-type curriculum, possibly on a two-year junior college level. Many of them will offer comprehensive training at their area vocational schools, thus serving the needs of many groups of students.

MASSACHUSETTS - Raymond F. Potter **

In Massachusetts we have three large area agricultural schools. These three schools are, or will, provide all the post high school agricultural education in eastern Massachusetts. The Stockbridge School of Agriculture at the State University serves western Massachusetts. At the

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* Vocational Agriculture Instructor, Flint Hill Area Vocational-Technical School, 3015 West 18th Avenue, Emporia, Kansas.

**Educational Manager, Essex Agricultural and Technical Institute, Hathorne, Massachusetts.

Essex Agricultural and Technical Institute we maintain a dairy herd consisting of 55 head, two acres of nursery stock, a greenhouse, poultry plant, small fruit and vegetable department, and a large forestry and recreation area.

A. Enrollment.

1. Secondary level of 244 agricultural high school students which has the largest FFA chapter in the United States.
2. Post high school is broken down as follows:
    a. 80 students in Practical Nursing.
    b. 40 students in Cosmotology.
    c. 75 students in Food Technology and Merchandising of Agricultural Commodities.
    d. 55 students in the Agricultural Technical curriculum.

    We are preparing to offer courses this fall in Food Services and Agricultural Engineering.

B. Building Development.

Our trustees are now selecting an architect for the design and construction of a new Food Technology and Merchandising Building to provide optimum facilities for 300 students.

C. Academic and Occupational Training.

The agricultural technical students are in school for 30 weeks and have a supervised work experience program for an additional 20 weeks. They receive 9 credits for their supervised work experience.

Each student is visited eight times during their supervised work experience program. This establishes a good rapport between the instructor and the student, and keeps the instructor in contact with the employer.

D. Problems.

1. Hiring adequate instructional staff.
2. Proper professional improvement for technical agricultural instructors.
3. Retaining technical students for the second year in that many students are lost to four-year colleges and industry.

E. Trends.

1. In the production area, Floriculture and Ornamental Horticulture are the fastest growing fields, along with recreational activities such as forestry and park maintenance.
2. In the service area, agricultural mechanics and the care of small animals is increasing the demand for technicians.
3. The food industry desires technicians for sales, processing and quality control.

MINNESOTA - Ed Hartog*

In Minnesota there is one central large university with several branches, including the College of Agriculture. There are seven or eight four-year colleges in Minnesota. At the present time there are 15 rapidly growing junior colleges and all of these units are independent of each other. There are 26 rapidly expanding and developing area vocational schools which serve under the public school system. Twelve of these area vocational schools offer programs in agriculture. Technical agricultural education is limited to the area vocational schools, except for a newly created technical institute which is a branch of the university.

The area vocational schools have the following programs:

Farm Equipment and Sales - oldest program, started in 1957.

Production Agriculture - started in 1960.

Retail Florists.

Agricultural Chemistry and Fertilizer.

Artificial Breeding Technology.

Agricultural Sales.

In Minnesota we believe that Farm Management is a very important course for our young people and adults. At the vocational schools we are currently analyzing Farm Management records. Last year 11,000 Farm Management books were analyzed at six regional centers.

At the present time in the area vocational schools we have 58 instructors, and approximately 600 students. Plans call for an additional 300 students and 28 additional instructors in the near future. Plans have been made to teach short courses which will be rather intensive as far as developing skills are concerned. At the time, in the area vocational schools, tuition is free, and the courses are non-transferable in most cases. Future plans call for comprehensive education in the area vocational schools to satisfy the needs of all the students.

NEW HAMPSHIRE - Ralph Granger**

Technical Education in Agriculture is offered in New Hampshire only at the Thompson School of Applied Science. A two-year program in agriculture has been in existance in the College of Agriculture since the turn of the century. In 1939 a definite program was set up as the Applied Farming Course. In the early 1950's, the name was changed to the Thompson School of Agriculture because the program was broader than farming.

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*Willmar Area Vocational School, Willmar, Minnesota.

**Associate Professor of Poultry Science, Thompson School of Applied Science, University of New Hampshire, Durham, New Hampshire.

In 1966 the name was again changed to the Thompson School of Applied Science due to the broadening of the curriculums offered. The Degree of Associate in Applied Science was first awarded in 1965. The Thompson School operates as a Division of the College of Agriculture at the University of New Hampshire.

The Thompson School currently is offering curriculums in the following areas:

Applied Animal Science.

Commerce Technology.

Food Service Management.

Forestry.

General.

Soil, Water and Construction Technology.

Applied Plant Science.

OHIO - Warren Weiler *

Ohio ranks among the upper ten states in total agricultural production. It is one of the top states in number of acres under glass, and is among the leaders in horticulture and food processing. A comprehensive study recently completed shows approximately 1.5 non-farm agriculturally related workers for each man on the farm. Therefore, much need exists for programs to train technicians, but Ohio has been very slow to develop programs for this purpose.

Four years ago we realized this need, and that we could do something about it. We appointed a statewide committee to consider the problem and it was decided that we consider first an agricultural laboratory technician, with special emphasis on technicians to work with veterinarians. However, a committee of veterinarians did not look with favor on the proposal, so it was tabled.

The committee then decided upon a program to train technicians for the agricultural business and service industry. A committee from this area was appointed, the idea was accepted, and we initiated a program at Springfield. A former teacher of vocational agriculture was selected to head up the program. This man had been successful as an elevator manager for nine years. The program started in September, 1964, and graduated 12 from the class in 1965. In 1966, 18 were graduated.

A program to develop technicians for the agricultural equipment industry was initiated in 1965. We employed an agricultural engineer with experience to head up this program at Springfield. This spring 14 men graduated from this program.

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*Supervisor, Vocational Agriculture, Department of Education, Columbus, Ohio.

All of these graduates have been placed, most of them at salaries ranging from $5000 to $6000 per year. Enrollments at present are sufficient to fill the classes for next year.

In September, 1965, we initiated a class in food processing , with emphasis on plant operation. A committee from this industry worked closely with us. Eighteen were enrolled and the program is conducted in cooperation with the city of Columbus, and the Ohio State University, using the university processing equipment.

Plans are progressing to start a mid-management program in food processing in September of 1966. Also planned are programs in Nursery and Landscaping and in Farm Management for September, 1967. In addition, consideration is being given to programs to train Resources Conservation and Agricultural Laboratory technicians.

We have had the use of committees in all of these areas and involve them freely in deciding what programs to initiate, the curricula, experience programs, placement, scholarships, and also to publicize the programs.

It is firmly believed that instructors should have experience in the industry and that all instructors should fully understand the objectives of the programs.

It is planned to initiate a placement for experience program next year and we have the support of all the committees involved. Final details regarding the procedures have not been completed, however, the acceptance of the product of our program by the industry is proof that we should continue and expand technical education programs.

WISCONSIN - Keith W. Stoehr*

Wisconsin has over 60 vocational schools. Eight of these are called Technical Institutes and offer associate degrees in a number of program areas. Two area technical institutes have been developed in Kenosha and Wausau, Wisconsin.

Programs are being studied and implemented, and at the present time there are technical level programs in operation. The following are examples of agricultural program offerings:

Agricultural Marketing	Wausau
Agricultural Mechanics	Wausau
Conservation	Oshkosh
Horticulture (Production)	Kenosha
Horticulture (Retailing)	Kenosha

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*Instructional Supervisor, Kenosha Area Technical Institute, Kenosha, Wisconsin.

Many schools offer programs in other fields, but many of the graduates are placed in agriculturally related industries. Examples of these programs which are offered at the Kenosha Area Technical Institute are:

Fluid Power Maintenance.

Industrial Marketing.

Mechanical Design Technology.

The Wisconsin State Board of Vocational, Technical and Adult Education has established State Advisory Committees in Dairy and Food Processing and in Agri-Business. The State Board and these committees are now studying the need for establishing additional programs in agriculture and agriculturally related fields.

Our new campus in Kenosha which will be completed by the second semester of the 1966-67 school year consists of an Academic Building, a Science Building, a Service Building, an Industrial Building, and a Horticulture Building with attached greenhouses. Other technical institutes in Wisconsin are also planning or constructing new or additional facilities.

MICHIGAN - Maurice D. Swift*

I. The following observations are made in regard to agriculture in Michigan:

  A. Gross sales of farm commodities are increasing.

  B. The number of commercial farms are decreasing, but the farms are increasing in size.

  C. The number employed on farms is decreasing but the number employed in related industries is increasing rapidly.

  D. Well trained technical people are in great demand in many agricultural areas.

  E. In order to compete with other industries, agriculture must develop the following areas:

    1. Communications and public relations to inform the people of the needs in agriculture.

    2. Development of technical training programs to meet the needs.

    3. Working relations with industry -- cooperation in meeting the needs, training and placement in agricultural industries.

II. Agricultural Training Programs in Michigan.

At the present time the largest program for the training of agricultural technicians exists at Mighigan State University. It offers two-year programs in the following areas: Commercial Floriculture, Elevator and Farm Supply, Farm Equipment Service and Sales, Landscape and Nursery Management, and Soil Technician.

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*Dean, Technical-Vocational Studies, Montcalm Junior College, Stanton, Michigan.

The total enrollment in these programs exceeds 200 students. It is anticipated that two additional programs will be added in the future. These will include Turf Grass Management and Food Processing.

In addition to the two-year programs, many short courses are offered each year. The following areas are covered with short courses: Farm Shop, Farm Power, Livestock Selection, Weed Control, and Forestry.

III. Programs Available.

There are six community colleges located throughout the state that are in various stages of developing two-year programs of technical agricultural education. The need has been determined for several offerings in agriculture and programs are being added as rapidly as possible considering factors such as need, recruitment of students, facilities, and faculty. The major interest at the present time appears to be in farm power, agricultural business and horticulture.

OPPORTUNITIES UNLIMITED

H. N. Hunsicker*

Summary of Remarks

My topic is "Opportunities Unlimited". This title in itself connotes unbelievable challenges. In agricultural education, we do have unlimited opportunities and especially in post high school education. The world population is growing rapidly. It is expected to double in 15 years, and triple by the year 2000.

Approximately 50 new two year post high school institutions are being established annually and this trend is expected to continue for several years. The level of education for those entering agriculture is increasing and soon the completion of two years of post high school education for young people will be almost as common as high school graduation is today.

One of our responsibilities is to work closely with agricultural businesses and farm and trade organizations serving agriculture to see that their employment needs are met. In order to meet these needs we in agricultural education must promote, organize, and establish agricultural curriculums in these technical institutions.

Such two year curriculums will be offered in various kinds of institutions, such as junior colleges, community colleges, technical institutes, comprehensive schools, area vocational technical schools, state colleges and four-year colleges of agriculture. Many of the institutions may have different operating boards, some will be federally reimbursed while others will not. Agricultural educators should not be disturbed because they do not control these programs administratively. The role of the state supervisor in agricultural education is changing. We are entering a new era where our role is chiefly one of leadership responsibility for technical education in agriculture.

State supervisors of agricultural education should provide this leadership and should serve as coordinators in performing a dominant role in program promotion and development. In order to provide this leadership they should form advisory committees, study program needs and cooperate with the administrators in all types of institutions in establishing and maintaining the post high school technician training. It is imperative that we exercise administrative guidance in helping to control the numbers of technical programs of a particular type in the various colleges in a state.

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*Chief, Agricultural Education, Department of Health, Education and Welfare, U. S. Office of Education, Washington, D. C.

Other reasons why agricultural education staffs should perform the leadership role in post high school technical education in agriculture are as follows.

We are already in this field and therefore better able to understand the total training needs of agriculture. The agricultural education staffs work under state boards which are highly regarded and recognized for their leadership in education. Increasing appropriations of funds are being channeled through the state boards of education which will help in the development of post high school institutions. Agricultural educators are in a position to prepare curriculum materials, enter into research projects, secure assistance in building and equipment projects, and provide for work study programs. They have the cooperation of 12,000 teachers of vocational agriculture and these teachers hold the key to recruitment for post high school programs.

I would also like to point out the kinds of services that leadership should provide in connection with technician training programs. We need to involve administrators and instructors of post high school programs in our professional conferences. It is imperative that the vocational agricultural teachers and the instructors at the two-year level join together to form a strong force in agricultural education. Staff members should serve on advisory commitees of each and every one of the post high school institutions in a state. We need to help control the number of programs and the various kinds of programs in each of the states. We must cooperate in developing a national reporting and recording system. The state supervisors should include the agricultural staff of the post high school technical institutions in their official directory of agricultural teachers. Staff members can assist in recruiting good instructors for technical programs and also arrange for needed in-service training.

Agricultural educators can make available a coordinated local, state, and national youth organization. Youth organizations are a most important facility for instruction in agriculture when effectively coordinated with the total program.

Let us meet the challenge of "opportunities unlimited." Let us immediately take the initiative in providing leadership in agricultural education, not only for the high school and adult programs but also for technician training in agriculture.

CONCLUDING REMARKS

Howard Sidney*

The Training Institute has brought together leaders in agriculture and industry from across the United States. These men assembled have a broad base of experiences and ideas which have been fused together to clarify what is being done and also the challenge ahead for technical education in agriculture. Speakers and discussion groups have explored and explained:

1. The Need for Technical Education in Agriculture.
2. Facilities Necessary for Such Instructional Programs.
3. Faculty Requirements to Teach Courses in Technical Fields of Agriculture.
4. Planning Curriculums and Occupational Experiences.
5. Youth Activities.
6. The Function of the Advisory Committee.
7. Placement of Students.

Now the important task is ahead. It is up to the men in this room to organize and disseminate this information. This is most important if we are going to work together to provide the best possible educational opportunities for students seeking technical education in agriculture.

New York State is having excellent cooperation among the 300 teachers of agriculture, the Bureau of Agricultural Education, the personnel of the six agricultural and technical colleges, and the College of Agriculture at Cornell University. Meetings have been held during the last year or two to discuss what is being offered in each of these areas and how we can work together to have smoother articulation from one age group to another. These meetings have strengthened agricultural education in the state.

It was stressed that it is important to contact men in industry to acquaint them with the capabilities of graduates from agricultural and technical programs. This is a real challenge which we in education should meet since it will motivate students to pursue a career in agriculture.

Occupational work programs can be an excellent contact in assisting people in industry to become aware of what these graduates can contribute to their businesses which, in turn, should help the salary situation. We must also be ready to use the word "agriculture" correctly. We have been most anxious to project the correct image of agriculture, however at the same time we have avoided using the word and have frequently turned to other terminology with the idea that it would be more appealing. It is our responsibility to prevent this confusion and to explain agriculture and the related occupations in agriculture as they are. It will be through these means only that we will be able to educate the public as to the importance and the need for technical education in agriculture.

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*Chairman, Agricultural Division, State University of New York, Agricultural and Technical College, Cobleskill, New York.

The state reports were most informative. It is evident that we have a variety of programs at different stages in the various states. There is also a great deal of interest in developing and improving programs of instruction for technical education in agriculture.

The discussions held in the committee groups have been an important part of this Training Institute. The exchange of ideas and the recommendations resulting from these committee meetings will be valuable in considering and evaluating our own situation. The committee for "Youth Organizations" gave us something to think about. We certainly are going to have to include "Youth Activities" if we desire to develop constructive leadership.

Mr. Hunsicker emphasized "unlimited opportunities". This is most appropriate at this time. As educators, we have an opportunity never before equalled in the history of our country. With the rapid change in technologies, increased numbers of people, improved communications among people and the desire to have a better way of life, the door has opened for technical education in agriculture. While people are talking and thinking in this direction, we must also move to produce results. We do have "unlimited opportunities". I trust that each and every one of us attending this Training Institute will study and evaluate the information in this report and then use it as a constructive and helpful media in strengthening technical programs in agriculture.